Über dieses Buch

Dies ist ein digitales Exemplar eines Buches, das seit Generationen in den Regalen der Bibliotheken aufbewahrt wurde, bevor es von Google im Rahmen eines Projekts, mit dem die Bücher dieser Welt online verfügbar gemacht werden sollen, sorgfältig gescannt wurde.

Das Buch hat das Urheberrecht überdauert und kann nun öffentlich zugänglich gemacht werden. Ein öffentlich zugängliches Buch ist ein Buch, das niemals Urheberrechten unterlag oder bei dem die Schutzfrist des Urheberrechts abgelaufen ist. Ob ein Buch öffentlich zugänglich ist, kann von Land zu Land unterschiedlich sein. Öffentlich zugängliche Bücher sind unser Tor zur Vergangenheit und stellen ein geschichtliches, kulturelles und wissenschaftliches Vermögen dar, das häufig nur schwierig zu entdecken ist.

Gebrauchsspuren, Anmerkungen und andere Randbemerkungen, die im Originalband enthalten sind, finden sich auch in dieser Datei – eine Erinnerung an die lange Reise, die das Buch vom Verleger zu einer Bibliothek und weiter zu Ihnen hinter sich gebracht hat.

Nutzungsrichtlinien

Google ist stolz, mit Bibliotheken in partnerschaftlicher Zusammenarbeit öffentlich zugängliches Material zu digitalisieren und einer breiten Masse zugänglich zu machen. Öffentlich zugängliche Bücher gehören der Öffentlichkeit, und wir sind nur ihre Hüter. Nichtsdestotrotz ist diese Arbeit kostspielig. Um diese Ressource weiterhin zur Verfügung stellen zu können, haben wir Schritte unternommen, um den Missbrauch durch kommerzielle Parteien zu verhindern. Dazu gehören technische Einschränkungen für automatisierte Abfragen.

Wir bitten Sie um Einhaltung folgender Richtlinien:

+ *Nutzung der Dateien zu nichtkommerziellen Zwecken* Wir haben Google Buchsuche für Endanwender konzipiert und möchten, dass Sie diese Dateien nur für persönliche, nichtkommerzielle Zwecke verwenden.
+ *Keine automatisierten Abfragen* Senden Sie keine automatisierten Abfragen irgendwelcher Art an das Google-System. Wenn Sie Recherchen über maschinelle Übersetzung, optische Zeichenerkennung oder andere Bereiche durchführen, in denen der Zugang zu Text in großen Mengen nützlich ist, wenden Sie sich bitte an uns. Wir fördern die Nutzung des öffentlich zugänglichen Materials für diese Zwecke und können Ihnen unter Umständen helfen.
+ *Beibehaltung von Google-Markenelementen* Das "Wasserzeichen" von Google, das Sie in jeder Datei finden, ist wichtig zur Information über dieses Projekt und hilft den Anwendern weiteres Material über Google Buchsuche zu finden. Bitte entfernen Sie das Wasserzeichen nicht.
+ *Bewegen Sie sich innerhalb der Legalität* Unabhängig von Ihrem Verwendungszweck müssen Sie sich Ihrer Verantwortung bewusst sein, sicherzustellen, dass Ihre Nutzung legal ist. Gehen Sie nicht davon aus, dass ein Buch, das nach unserem Dafürhalten für Nutzer in den USA öffentlich zugänglich ist, auch für Nutzer in anderen Ländern öffentlich zugänglich ist. Ob ein Buch noch dem Urheberrecht unterliegt, ist von Land zu Land verschieden. Wir können keine Beratung leisten, ob eine bestimmte Nutzung eines bestimmten Buches gesetzlich zulässig ist. Gehen Sie nicht davon aus, dass das Erscheinen eines Buchs in Google Buchsuche bedeutet, dass es in jeder Form und überall auf der Welt verwendet werden kann. Eine Urheberrechtsverletzung kann schwerwiegende Folgen haben.

Über Google Buchsuche

Das Ziel von Google besteht darin, die weltweiten Informationen zu organisieren und allgemein nutzbar und zugänglich zu machen. Google Buchsuche hilft Lesern dabei, die Bücher dieser Welt zu entdecken, und unterstützt Autoren und Verleger dabei, neue Zielgruppen zu erreichen. Den gesamten Buchtext können Sie im Internet unter `http://books.google.com` durchsuchen.

This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

Google™ books

https://books.google.com

Stanford University Libraries
3 6105 013 947 663

Google

STANFORD·VNIVERSITY·LIBRARY

December 27, 1924.

THE

GARDENERS' CHRONICLE

A Weekly Illustrated Journal

OF

HORTICULTURE AND ALLIED SUBJECTS

(ESTABLISHED IN 1841.)

VOL. LXXVI.—THIRD SERIES.

JULY TO DECEMBER 1924.

STANFORD LIBRARY

LONDON
5, TAVISTOCK STREET, COVENT GARDEN, W.C.2.
1924.

329810

INDEX OF CONTENTS.

JULY TO DECEMBER, 1924.

(FOR SPECIAL HEADINGS SEE UNDER ANSWERS TO CORRESPONDENTS; BOOKS; CERTIFICATED PLANTS, ETC.; NURSERY NOTES; OBITUARY; PLANTS, NEW; SOCIETIES; AND ILLUSTRATIONS.)

A

ABIES BRACHYPHYLLA, 415
Acer nikoense, 356
Achillea tomentosa, 245
Acreage under crops, 107
Actaea, 334
Aethiopappus pulcherrimus, 334
Afforestation, the possibilities of, 293
Agricultural education and research, new grant for 192
Agricultural exploration of north-eastern China, 192
Agricultural research and plant-breeding in Scotland, 348
Agricultural scholarships, 207, 277
Agricultural Wages Board, 294, 384
Aldenham, flower gardening at, 282
Alders, the, 355
Allingham, E. G. (*A Romance of the Rostrum*) 392
Allwood, Montagu (*Carnation Culture Up to date*), 95
Alocasias, 269
Alpine garden, 21, 57, 74, 95, 128, 144, 163, 193, 212, 233, 245, 279, 297, 317, 329, 351, 368, 391, 408 419, 435
Alps, a novice in the, 60, 113, 167, 198
Amateurs' show at Westminster in 1925, 3, 208.
American Seed Trade Association, 39
Amorphophallus Titanum, 302
Androsace sarmentosa, 408
Anemone blanda, 420
Annuals: at Wembley, 74; for greenhouse and conservatory decoration, 11, 63, 128, 147, 165, 184, 212, 232, 299, 334, 352, 371, 404, 433
Answers to Correspondents:—**A**cacia, flaming Indian, 51; Acetylene gas residue, 190, Antirrhinum disease and formaldehyde, 346; Antirrhinum, shot-hole disease of, 104; Antirrhinums diseased, 158; Apple leaves distorted, 174; Apples: mildew on, 68; scab fungus on, 206; cordon dessert, 310; diseased, 382; glassiness in, 292; Silver-leaf disease of, 104; Arum Lilies diseased, 398; Asters diseased, 38; **B**eech tree attacked by coccus, 346; Bowling green, measurements of a, 398; Brick pond and water Lilies, 258; Brussels Sprouts attacked by slugs, 398; Buttercups on a lawn, creeping, 382; **C**abbages, club root on, 68; Celery spot disease, 292, 346; Chestnut trees diseased, 18; Chrysanthemums: "damping off," 292; single, 430; diseased, 310; Climbers for back wall of conservatory, 310; Clock golf, 382; Club root on Cabbages, 68; Coccus attacking Beech tree, 346; Cockchafers in soil, 174; Cordyline Parrei, 362; Cucumber leaves diseased, 68; Cytisus racemosus, propagation of, 68; **D**ahlia foliage for examination, 326; **F**armyard manure, substitute for, 174; Flamboyante, 310; Flowering shrubs for calcareous soil, 258; Fruit trees failing to crop, 276; Fumigating a vinery with hydrocyanic gas, 362; Fungi attacking Plane trees and Strawberries, 226; **G**ardener's notice, 158, 362; Gladioli for exhibition, 346; Gooseberry mildew, 18; Grapes: discoloured and cracking, 174; mildew on, 206; scalded, 18; unsatisfactory, 174; Green matter on water in a fountain basin, 158; **H**erbaceous plants, perennial, 326; Hydrocyanic gas, fumigating a vinery with, 362; **I**vory dust as manure, 398; Ivy leaf-blotch, 68; **L**aburnum Adamii, 226; Lawn, creeping Buttercup on a, 382; Linnean Society, fellowship of the, 88; **M**agnolia grandiflora, 326; Manager's notice to leave, 276; Medic on tennis courts, 104; Melons, netting early, 104; Mulberry fruits not ripening, 174; **N**arcissus bulbs diseased, 120; Nectarine fruits: dropping, 174; shrivelling, 206; **O**nions: diseased, 226; rotting in, 120; Orchid blooms differently coloured, 276; **P**each leaf curl, 104; Peach leaves diseased, 104; Pear midge, 88; Pear, Williams' Bon Chrétien not keeping, 346; Perennial herbaceous plants, 326; Plants for an iron soil, 382; Poplar trees dying, 346; Potatos and Cabbages diseased, 242; Potatos scabbed, 414, 440; Privet, insects on, 276; Pruning shrubs, 104; **R**aspberries not fruiting, 120; Rhododendron leaves infested with insects, 398; R.H.S. examinations, 292; Road sweepings, 310; Roses: rust in, 310; black spot of, 51; unsatisfactory, 18; Rye Grass attacked by a fungus, 242; **S**hot-hole disease: of Antirrhinums, 104; of Peaches, 104; Shrubs and climbers for a hot, dry clay bank, 310; Shrubs, pruning, 104; Silver-leaf disease of Apples, 104; Slugs, 398; Souchet or Chufa, 310; Strawberries: diseased, 51; not fruiting, 242; Sweet Pea fasciated, 174; **T**ennis courts: measurements of, 398; Medic on, 103; the construction of hard, 382; Tomatos: black rot of, 104; leaf-blotch disease of, 346; for market, 326; not growing, 36; sleepy disease of, 242; **V**ine leaves discoloured, 226; Vinery, fumigating a, with hydrocyanic gas, 362; Vines unhealthy, 276; **W**illow used by market gardeners, 104; Woodlices in greenhouse, 310
Anthericums, 3
Antirrhinum Asarina, 368
Antirrhinum diseases, notes on some, 150
Aphididae of Great Britain, the, 364
Aphyllanthes monspeliensis, 100
Apple, an old-fashioned dessert, 323
Apple blossom weevil, 106, 154
Apple blossoms, fertilisation of, 154
Apple canker, 294
Apple crop: the American, 160; the East Norfolk,. 102; the United States, 294
Apple grading and packing, instruction in, 159
Apple-growing in Great Britain, 293
Apple orchards in Devon, 202, 241
Apple scab, 271
Apple transport, conditions of, 228
Apple trees, the spraying of, 363
Apples: Barnack Orange, 427; Golden Harvey, 439; Laxton's Superb, 412; Margil, 439; Northern Spy, 439; Reinette Van Mons, 323
Apples: a discussion on, 288; brown rot of, 278; cordon dessert, 239; dessert, 339; early, 118; grading, 182; hardiness in, 160; import of French Cider, 277; late keeping dessert, 340; Morayshire, 416; storing, 271
Apricot and Dioscorides, the, 272
Apricots, canker in, 271
Arenarias, choice, 391
Arnold Arboretum, Deutzias in the, 94
Arum Lilies out of doors, 367
Ashton, Mr. Ben, 260
Asperula suberosa, 329
Aster hybridus luteus, 282
Astilbe simplicifolia hybrida, 127
Astragalus monspessulanus, 316
Atraphaxis Billiardieri, 43
Aubrietia tauricola alba, 297
Award of garden merit, 159

B

BAGATELLE, ROSE TRIALS AT, 312
Baker, Mr. Frederick: 244; appointment of, 142
Banana: industry of Jamaica, 121; production within the Empire, 348; the, in Uganda, 438
Barley seed, interesting experiments with Mount Everest, 311
Bastin, Mr. W. L., 208
Bath, improvements at, 317
Bayfordbury, Hertford, a new pinetum at 337
Beale, Reginald (*Lawns for Sports*), 7
Bean Masterpiece, 132
Beans, Runner, 428
Bedding schemes, tall plants in, 186
Bees and Apple fertilization, 424
Begonia Gloire de Lorraine, 409; B. Lady Ann, 259; B. Lloydii, 109
Begonias at Kew, winter-flowering, 384
Belle Vue Park Berlin, the future of, 384
Bentham, G. (*Handbook of British Flora*), 437
Berberidopsis corallina, 31, 184
Berberis japonica, 421
Bibliographical curiosity, a, 336
Bignonia Cherere, 145
Bird sanctuaries in Glasgow Parks, 259
Birmingham: Chrysanthemum show at, 328; improvements at, 358
Blackpool, improvements at, 377
Blue Garden at Pyrford Court, Woking, 347
Bog garden, 58, 94, 368
Books, notices of:—**A** Handbook of Crocus and Colchicum for Gardeners (*E. A. Bowles*), 336; All about the Rose in simple language (*Sir J. L. Cotter*), 128; A Real A.B.C. of Gardening (*A. J. Macself*), 357; A Romance of the Rostrum (*E. G. Allingham*), 392; **B**otanical Magazine, 20, 243; Bulletin of the Chamber of Horticulture, 2; **C**arnation Culture up-to-date (*Montagu C. Allwood*), 95; **D**warf and Slow-growing Conifers (*Murray Hornibrook*), 301; **F**irst Book of Grasses (*Agnes Chase*), 252; Flowering Plants of South Africa, 327; **G**ardening in Sunny Lands (*Mrs. Philip Martineau*), 374; **H**andbook of British Flora (*G. Bentham*), 437; Hardy Bulbs for Amateurs (*Rev. J. Jacob*), 322; **J**am-making, including Preserves, Marmalades, Pickles, and Home-made Wines (*Mrs. Beeton*), 95; **L**awns for Sports, their Construction and Upkeep (*R. Beale*), 7; London Parks and Open Spaces, 191; **M**anual of Cultivated Plants (*L. H. Bailey*), 213; Manures and Fertilisers (*W. Dyke*), 7; Mediaeval Gardens, (*Sir F. Crisp*), 422; **R**hododendrons and the Various Hybrids (*J. G. Millais*), 105; Rhododendrons for Amateurs (*E. H. M. Cox*), 252; Rice (*E. Bingham Copeland*), 75; Rock Gardening in New Zealand (*David Tannock*), 357; **S**even Thousand Dahlias in Cultivation (*J. B. S. Norton*), 266; Soils and Crops (*John H. Gehrs*), 374; **T**ext-book of Pomology (*J. H. Gourley*), 144; The A.B.C. of Tomato Culture under Glass (*W. Dyke*), 121; The Cactaceae (*N. L. Britton and J. N. Rose*), 180; The Florists' Bibliography (*C. Harman Payne*), 58; The National Rose Society's List of Roses and Instructions for Pruning, 357; The Nature and Properties of soils, (*L. H. Bailey*), 53; The Old English Gardening Books (*E. Sinclair Rohde*), 422; The Practical Book of Outdoor Flowers (*Richardson Wright*), 410; The Romance of the Apothecaries' Garden at Chelsea (*F. Dawtrey Drewitt*), 37; The Roses of Britain (*A. H. Wolley-Dod*), 200); The Story of the Maize Plant (*Paul Weatherwax*), 237; Trees and how they Grow (*G. Clarke Nuttall*), 237
"Botanical Magazine," 20, 243
Botanic garden for New Zealand, a National, 415
Bougainvillea Mrs. Butt, 243
Bowles, E. A. (*A Handbook of Crocus and Colchicum for Gardeners*), 336
Brasso-Laelio-Cattleya Eileen Low 283
Brazil nuts, 431
Brentford's new park, 191
Brighton: a new park and recreation ground for, 208; improvements at, 317

British Empire Exhibition: forestry at the, 238, 254; horticulture at the, 6, 28, 62, 74, 99, 133, 168, 266, 286
British Pteridological Society, 124
Britten, the late Mr. James, legacies by, 400
Britton, N. L. (*The Cactaceae*), 180
Broadcasting agricultural information, 70
Brunfelsia latifolia, 401
Brunsvigia Josephinae, 313
Bulb Garden, 6, 27, 58, 74, 100, 123, 143, 164, 179, 197, 217, 233, 254, 267, 281
Bulbs, Dutch, and Dutch competition, 241
Bulbs, importation of, into the Isles of Scilly, 277
Bullace Langley Black, 439

C

Cabbages, Spring, 118; for northern gardens, 53
Calendula officinalis, 298
California, Dahlia show in, 260
Camberwell parks and gardens, 282
Cambridge Botanic Garden, 363
Campanula nitida, 21; C. Profusion, 193; C. van Houttei, 94; C. Vidalii, 10; C. W. H. Paine, 74; C. Zoysii, 33
Canada, importation of plants into, 142
Carbon-dioxide and increased crop production, 121
Carnation Winsome Wharton, 340
Carnations at Bush Hill Park, 376; at Wembley, 62; perpetual-flowering, 11, 409
Carpenteria californica, 421
Carrot's crimson eye, the, 186
Cassia corymbosa, 186
Catalogue descriptions, 241
Cat, the Bothy, 431
Cattleya Aphrodite, 91; C. Dowiana Rosita, 349; C. Fabia, 212; C. John Henry, 212; C. Mona, 91; C. Mrs. Gratrix, 349; C. Norman, 42; C. Orient, 319; C. Sunstar, 212
Ceanothus rigidus, 421
Cedar, pencil, 260
Cedrus atlantica glauca, 227
Celery, 101; Turnip-rooted, 102
Cercidiphyllum, autumn-colouring of, 331
Certificated Fruits:—Black Currants: Florence, 103; Invincible Giant Prolific, 103; Grape, Côte House Seedling, 223; Red Currant, Big Red Dutch, 103; Strawberry, King George, 103.
Certificated Plants:—Asters: Maid of Athens, 219; Mme. E. Besnard, 255; Mrs. Pierpoint Morgan, 256; Royal Blue, 219; Thora Perry, 219; Wells's Favourite, 256; Atraphaxis Billardieri, 33; Begonias: Albatross, 33; Lady Ann, 33; Berberis pruinosa, 290; Billardiera longiflora, 325; Bomarea cantabrigiensis, 119; Brasso-Cattleya British Queen var. splendens, 395; B.-C. Dietrichiana var. Lambeau, 219; Brasso-Laelio-Cattleya Alfred Mollet var. Vivid, 290; B.-L.-C. J. M. Black, 188; B.-L.-C. Thyone var. Excelsior, 242; Callicarpa Giraldiana, 324; Carnations: Anne Corry, 360; Doris Cox, 395; Jeanette, 395; Lady Hindlip, 324; Sir Charles Seeley, 66; Sultan, 33; Viscountess Hambleden, 290; Winsome Wharton, 290; Cattleya Annette, West Point var., 103; C. Blushing Bride, 308; C. Clive var. ardentissima, 290; C. Dupreana magnifica, 242; C. Enid alba, var. The Bride, 308; C. Ileana, 242; C. Iris var. Haddon Belle, 307; C. Joyce Hanmer, 188; C. Princess Ileana, 242; C. Suavior var. Glory, 50; C. Tagus var. Excelsior, 154; C. Venus var. Enchantress, 242; C. Wembley, 324; Chrysanthemums: Aldyth, 360; Annette, 341, 360; Australian Gold, 189; Balcombe Beauty, 429; Brilliancy, 219; Bronze Early Buttercup, 189; Challenger, 360, 397; Cissbury Yellow, 219; Citron, 242; Dorothy Wilson, 291; Eleanor, 397; Enid Elder, 291; Ennismore, 341; Envy, 360, 397; Euphie Ritchie, 273; G. Carpenter, 275; Gloriosa, 291, 310; Golden Ritchie, 273; Gorgeous, 325; Harmony, 324, 396; H. Fox Wilson, 309; Hon. Edith Smith, 341; Illuminator, 219; Innocence, 273; Janet Wyper, 273; J. Cotton, 256, 275; J. Symonds, 341; Jean Pattison, 291; Julian, 310; Kathleen Wells, 219, 242; Laddie, 291; Lichfield Peach, 220; Lynette, 360; Mary A. Houston, 273; Miss Dorothy Wilson, 309; Mr. J. Barrell, 360; Mr. T. W. Pockett, 324; Mr. W. Petty, 341; Mrs. Jack Pearson, 242; Mrs. Phil Page, 242; Mrs. R. Jinks, 360; Nan Luxford, 341; Primrose Poiteau, 256, 275; Reginald A. Roots, 256, 275; Salmon Profusion, 219, 242; Salmon Queen, 324; Sheila, 324, 397; Shirley Bronze, 241; Silver Queen, 219, 242; Sportsman, 360, 397; Stirling Stent, 341; Sulphur Queen, 291; Sunbeam, 275; Sunburst, 189, 341; Sunshine Willcox, 397; The Wizard, 291; T. Slack, 324; Walter Howe, 398; Wembley, 242; White Model, 291, 309; Clerodendron ugandense, 154; Clethra Fargesii, 119; Colchicum libanoticum, 429; Coreopsis auriculata superba, 33; Cotoneaster glaucophylla, 325; C. rubens, 154; Crataegus Carrierei, 429; Cypripedium Cappamagna var. Fred Sander, 395; C. Cappamagna var. Samuel Gratrix, 430; C. Cavalier, 430; C. Crusader, Westonbirt variety, 395; C. Damascus, 430; C. Doris Stanton, 395; C. Dr. Clayton, 396; C. Dr. Clayton, var. Purity, 396; C. elegantulum, 242; C. Enchantress, Pitt's variety, 50; C. Eros, 396; C. Golden Wings, 307; C. Joseph Thrower, 307; C. Llewellyn Hanmer, 430; C. Lord Allenby, 430; C. Madras, 396; C. Memoria F. M. Ogilvie var. The Queen, 396; C. Monialis var. Hilda Sharp, 396; C. Mrs. Stephen Anderson, 395; C. Odin, 395; C. Olympia, 396; C. Our Princess, 395; C. Perseus, 429; C. The God Pan, 396; C. Viking, 274; Dahlias: Carine, 307; Charmer, 306; Dunecht Gem, 273; Emblem, 307; Gwynne, 306; Haslemere Star, 307; Hindhead Star, 307; Intense, 273; Joyce Goddard, 307; Little Jennie, 306; Mrs. Forester Paton, 307; Nelly, 307; Norah Bell, 306; Polar Bear, 306; Rosie, 306; Rosie Supreme, 306; Snowdrift, 273; Sweet, 306; The Rose, 306; Thursa, 307; Reading Star, 307; Sunset, 273; Delphiniums: Dina, 173; Empress Queen, 173; Hortulanus E. Th. Witte, 173; Ivorine, 173; King George V., 173; Princess Elisabeth, 173; The Shah, 33; Toeth-ank-amen, 173; Dianella tasmanica, 325; Dianthus Mascott, 87; Dierama pulcherrima var. Kingfisher, 119; Escallonia montevidensis, 255; Eucryphia Nymansay, 154; Euonymus (affinity alatus), 154; E. yedoensis, 154; Eustoma Russelliana var. The Oxford, 219; Gaultheria pyroloides, 154; Gladiolus E. H. Liddell, 119; G. Nora Toomer, 219; Helenium Mrs. Bradshaw, 189; Helianthemum Ben Nevis, 87; H. Ben Venue, 87; H. Nicholl's Apricot, 87; H. The Bride, 87; Hemerocallis hybrida Lady Hesketh, 65; Hibiscus Waimeae, 189; Hippeastrum sp. 255; Hoheria populnea lanceolata, 119; Hydrangeas: opuloides (Hortensia) var. albo-rosea, 119; opuloides var. coerulescens, 119; Iris David Bles, 173; I. Goldcrest, 173; I. Golden Lion, 173; I. Heemskerk, 173; I. Josselin de Jong, 173; I. Lucia, 173; Ixiolirion Ledebouri, 173; Kniphofia Nelsonii, 255; Laelio-Cattleya Canhamiana, Rosslyn variety, 50; L.-C. Golden Light, Westonbirt variety, 290; L.-C. Hassallii alba, 307; L.-C. Hassalli var. Supreme, 324; L.-C. Linda var. superba, 290; L.-C. Lustrissima, Westonbirt variety, 324; L.-C. Marina var. Milo, 219; L.-C. Mrs. T. Ward var. Majestica, 154; L.-C. Nanon var. Zebra, 290; L.-C. Profusion var. Arabic, 255; L.-C. Profusion var. compacta, 154; L.-C. Pyramus var. Colossa, 290; L.-C. Queen Mary var. Colossal, 289; L.-C. Queen Mary var. Gloriosa, 290; L.-C. Queen Mary, Westonbirt variety, 290; L.-C. Sargon var. Gloriosa, 255; L.-C. Vega, 188; Lagerstroemia indica, 65; Lonicera ligustrina yunnanensis, 325; Lupinus polyphyllus Pink Pearls, 173; L. p. Tunic, 173; Lycaste Youngii, 103; Miltonia Beau Brummel var. Aureole, 324; M. Constance var. Regina, 65; M. William Pitt var. atropurpurea, 360; M. Wm. Pitt var. King's Crown, 50; M. Wm. Pitt var. Moulin Rouge, 50; Miltonioda Boadicea, 360; Nerine Miss E. Cator, 290; N. Mrs. Arthur Elwes, 290; Odontioda Brewii var. rubra, 103; O. Eastern Monarch, 430; O. Juanita, 188; O. King Manuel, 103; O. Zenobia, Edgemoor variety, 242; Odontoglossum Aphrodite, Haddon House variety, 242; O. aureatum, 396; O. Col. Leith var. punctatissimum, 242; O. crispum Duke of Lancaster, 242; O. c. Enchantress, 307; O. c. Margaret Smith, 242; O. c. var. Mollah, 274; O. c. Viola, 242; O, eximium Beaute Celeste, 103; O. grande, Hey House variety, 308; O. Krameri, 242; O. Krameri album, 307; O. majesticum var. Admiration, 290; O. St. Elmo var. Laura, 50; O. St. George var. Blue Bird, 103; O. Senlac, 50; Odontonia Alexandra, 395; O. Joiceyi, 119; O. Olivia, 395, O. regalis, 360; O. Stelpae var. maculata, 290; Oncidioda Cooksoniae magnifica, 242; Polystichum angulare divisilobum laxum, 325; P. a. d. nitescens grande, 219; P. a. falcatum No. 1, 325; Potentilla dahurica var. manchurica, 219; P. Farreri var. prostrata, 219; Primula siamensis, 255; Pyrethrum Dr. Bosch, 173; P. hybrida Eileen May Robinson, 173; Pyrus alnifolia, 290; P. americana nana, 154; P. pinnatifida, 219; P. Zahlbruckneri, 290; Ranunculus asiaticus, 103; R. Dr. Ragionieri's Strain, 103; Rhamnus erythroxylon, 395; Roses: Cecil, 15; Columbia, 429; Dorothy King, 203; Ellen Terry, 15; Ethel Chaplin, 15; Eva Eakins, 203; Fragrance, 33; Lady F. Stronge, 203; Lord Lambourne, 33, 203; Mabel Lynas, 203; Mabel Turner, 15; Marcia Stanhope, 15; Mrs. Beatty, 15; Mrs. Talbot O'Farrell, 203; Norman Lambert, 203; Phyllis Bide, 291; Souvenir Rose Berkeley, 203; Superb, 15; Scabious Azure Fairy, 274, S. Black King, 274; S. Bright Crimson, 274; S. Snowball, 274; Schizanthus Chislehurst Giant Hybrids, 17; S. Snowflake, 17; S. Tall giant-flowered Hybrids, 17; S. wisetonensis Excelsior, 17; S. w. Giant-flowered, 17; S. w. Giant Prize Strain, 17; S. w. Pylewell Strain, 17; Sedum elegans, 173; Sophro-Laelio-Cattleya Isabella var. Vivid, 188; Sweet Peas: Charity, 274; Constance Hinton, 274; Cream Constance Hinton, 274; Crimson King, 274; Edna May Improved, 274; Guinea Gold, 38; Ivory Picture, 38; Joan Ryder, 274; King White, 274; Lord Lascelles, 38; Majestic Cream, 274; Mammoth, 38; Maroon King, 274; Mascotts White, 274; Matchless, 274; Maud Holmes, 274; Nubian, 274; Paradise Ivory, 274; Sunproof Crimson, 274; The Beacon, 87; Unwin's Crimson, 274; Warrior, 274; Wembley, 38; Sweet Williams: Auricula-eyed Extra Large, 103; Crimson, 103; Double Mixed Improved, 103; Holborn Glory, 103; Mixed hybrids, 103; nigrescens, 103; Pink, 103; Pink Beauty, 103; Scarlet Beauty, 103; White, 103; Syringa Juliana, 154; S. Potaninii, 154; Tritonia crocata var. Hogarth, 173; T. c. Le Printemps, 173; T. c. Nectar, 173; T. c. Rosalie, 173; Vuylstekeara Aspasia var. polysticta, 324; Zinnia, Dobbie's Giant Dahlia-flowered, 65
Certificated Vegetables: Beans: Bounteous, 226; Bountiful, 226; Canadian Wonder, 226; Canadian Wonder Express, 226; Canadian Wonder Improved, 226; Dwarf Fillbasket, 226; English Wonder, 226; Evergreen, 226; Excelsior, 226; King of the Wax, 226; Longswood, re-selected, 226; Magpie, 226; Mastodon, 226; Masterpiece, 226; Masterpiece Improved, 226; Mogul, 226; Ne Plus Ultra Selected, 226; Nonsuch, 226; Perfection, 226; Perpetual, 226; Reliance, 226; St. Andrews, 226; Superlative, 226; The Wonder, 226; XL All, 226; Lettuces: Alexandra White, 174; Giant Paris White, 174; Giant White, 173; Madrid Green, 173; Madrilene, 173; Paris White, 173; Paris White, re-selected, 174; Summer White, 174; Superb Champion White, 174; Superb White, 174; Trianon Early White, 174; White

Improved, 174; Potatos: Duke of York, 274; Immune Ashleaf, 274; Midlothian Early, 274; Sharpe's Express, 274
Ceylon, a hill garden in, 372
Chalkwell Park, Westcliff, 358
Charieis heterophylla (syn. Kaulfussia amelloides), 299
Chase, Agnes (*First Book of Grasses*), 252
Chelone, 59
Chionodoxa Luciliae, 124
Christmas, decorative plants for, 352
Chrysanthemum Mabel Weston, 315
Chrysanthemums, 76: at Southend, 392; at Wembley, 228: from seed, 411; new, 426: recently introduced, 410
Chrysogonum virginianum, 107, 143
Cider and cider-fruit competitions, 192
Cider-day at Long Ashton, Bristol, 1
Cimicifuga racemosa, 58
Cirrhopetalum miniatum, 163
Clay Challenge Cup for Roses, award of the, 20
Claytonia australis, 316
Clematis cuttings, 408
Clematis, shrubby, 331; C. recta, 316; C. Rehderiana and allied species, 261
Clerodendron ugandense, 268
Clethra, 408; C. alnifolia, 211
Colchicum, 143
Colchicum Bornmuelleri, 233
Colombo garden, a, 112
Colquhounia coccinea, 353
Composites, interesting, 127
Concrete in the garden, 306
Coreopsis auriculata superba, 39
Cornus arnoldiana, 125
Cotoneaster Franchetii, 370; C. Henryi, 316; C. hupehensis, 31
Cotter, Sir J. L. (*All about the Rose in Simple Language*), 128
Covent Garden market: Christmas flowers in, 428; strike at, 122
Cox, E. H. M. (*Rhododendrons for Amateurs*), 252
Crab John Downie, 261
Cranfield, Mr. W. B., 142
Crassula columnaris, 421
Crataegus Carrierei, 391, 429; C. tenacetifolia, 285, 356
Crop production, carbon-dioxide and increased, 121
Crops, the acreage under, 107
Cruciferous crops, insect pests of, 122
Cultural memoranda, 13, 85, 385, 409
Currant and Gooseberry industry, the American, 431
Currants, Black, reversion in, 363
Cyananthus, 368
Cypripedium puzzle, a, 145
Cypripedium spectabile, 91; C. White Star, 405
Cypripediums at Nether Warden, 420
Cyrtanthus, 93
Cytisus Adamii, fruiting of, 384; C. supinus, 316; C. supranubius, 5

D

Dahlem Botanic Garden and Museum, 208
Dahlem Horticultural College, centenary of the, 159
Dahlia as a cut flower, the, 55
Dahlia poem, prize for the best, 90
Dahlia show in California, 260
Dahlia, the decorative, 229, 315; the history of the, 159 175, 191
Dahlias at Wembley, 133
Dalkeith, new park for, 358
Dasheen and its cultivation, the, 416
Davenham gardens, Malvern, 20
Davidia Vilmoriniana, 183
Deeside, on royal, 2
Delphiniums, 71; bacterial leaf-spot of, 364
Dendromecon rigidum, 369
Desfontainea spinosa, 408
Deutzia setchuenensis, 165
Deutzias in the Arnold Arboretum, 94
Development Commission, the, 364
Development Commissioners, fourteenth report of the, 399
Dianthus arboreus, 421; D. Lereschei, 21, 57
Dixon, Mr. H. H., appointment of, 259
Draps, M. Emile, 294
Drewitt, F. Dawtrey (*The Romance of the Apothecaries' Garden at Chelsea*), 37
Dyke, W. (*Manures and Fertilisers*), 7; (*The A.B.C. of Tomato Culture under glass*), 121

E

East Malling Research Station 227
"Eat more fruit" campaign, 228
Eccremocarpus scaber, 391
Eelworm disease of Phloxes, 175
Egg Plant, the, 412
Elaeocarpus Ganitrus, 306; E. lucidus, 209
Ellis, Mr. T. E., 192
Enkianthus, 48
Epacris, 41
Epimedium, 420
Epipogon Epipogium, 114, 159, 394
Erica ciliaris, 369
Erigeron leiomerus, 57
Erinacea pungens, 89, 136
Erodium pelargonifolium, 59
Eryngium, 107, 143; E. mucronatus, 279
Erythronium revolutum var. White Beauty, 419
Escallonia exoniensis, 369
Essay competition for Lea Valley employes, 141
Eucalyptus psylla, the, 425
Eucalyptus snout-beetle, the, 400
Euchardium Breweri and E. grandiflorum, 11
Eucryphia Nymansay, 161; E. pinnatifolia, 253
Euonymus yedoensis, 408
Evodia quercifolia, 303
Exacum affine, 11; E. macranthum, 11

F

Federation Horticole Professionnelle Internationale, 278
Ferns, new and rare varieties of native, 94
Field day at the Research Station, Long Ashton, 76
Floral decorations in private establishments, 404
Flora of Gorgona Island, 294
Florists' flowers, 76, 263, 315, 410, 425
Flower garden, the, 4, 22, 40, 56, 72, 92, 126, 146, 162, 178, 194, 210, 230, 246, 262, 280, 296, 314, 330, 350, 366, 386, 402, 418, 434
Flower gardening at Aldenham, 282
"Flowering Plants of South Africa," 327
Flower-show judges of the future, 100, 171
Flower shows, judging artistic exhibits at, 181
Flowers, forcing winter, 385; some good autumn, 195, 231
Foreign correspondence, 14
Foremarke Challenge Cup for Gladioli, award of the, 176
Forester's golden wedding, a, 3
Forestry at the British Empire Exhibition, 238, 254
Forestry Commission, 259
Fraxinus americana ascidiata, 335
Freesias, 11, 218, 289: as annuals, 48, 103, 164, 255
French Chrysanthemum Society, 1, 176
Frost and pruning-cuts, 358, 394
Fruit crops: in the Evesham district, 324; remarks on the conditions of the, 101, 135, 153, 169, 200, 213, 254, 270, 287, 305: 322: summaries of the, 79, 80, 81, 82, 83, 84
Fruit garden: the hardy, 4, 13, 22, 30, 40, 56, 72, 92, 102, 126, 146, 162, 178, 186, 194, 201, 210, 230, 246, 262, 271, 280, 296, 314, 323, 330, 350, 358, 366, 375, 386, 392, 402, 418, 434; the market, 30, 152, 182, 270, 339, 426
Fruit gardens at Wembley, the, 6
Fruit land, 339
Fruit presented to the Lord Mayor of London, 228
Fruit prices in Germany, 364
Fruit register, 31, 95, 340, 375, 412, 427, 439
Fruit trade's campaign, 399
Fruit tree borders, autumn watering of, 186
Fruit trees: the propagation of, 293; the training of wall, 339: under glass, syringing, 85; wall, 358
Fruits suitable for planting in a north aspect, 323
Fruits under glass, 4, 22, 40, 56, 72, 92, 108, 126, 146, 162, 178, 194, 210, 230, 246, 262, 280, 296, 314, 330, 350, 366, 386, 402, 418, 434

G

Garden-craft in the Canticles, 26, 130, 166, 235, 268, 318, 354, 406, 436
Garden crops, diseases of, 89
Garden gates, 417
Garden notes from S.-W. Scotland, 24, 43, 283, 353
Gardeners: aid to a hospital by, 39; and their wives, 14, 48, 102, 154: examinations for, 373: legacies to, 176, 400; over forty, 32: status of, 439: training of young, 25, 340, 377, 413
"Gardeners' Chronicle": medal, award of the, 54: seventy-five years ago, 3, 21, 39, 55, 71, 90, 123, 142, 161, 177, 193, 209, 229, 245, 260, 279, 295, 313, 329, 365, 349, 385, 401, 417, 432
Gardeners' Royal Benevolent Institution, 208, 260, 311, 381, 398
Gardeners' widow, legacy to a, 244
Garden league for devastated France, 2
Gates, garden, 417
Gaultheria trichophylla, 369
Gaura Lindheimeri, 298
Genista cinerea, 5
Geese in orchards, 31
Gehrs, John H. (*Soils and Crops*), 374
Geranium sanguineum, 95, 212
Gilia, 63
Ginger, preserved, 70
Gladioli: quality in, 248: the Foremarke Challenge Cup for, 176
Glasgow chair of botany, 328
Glasgow Parks: bird sanctuaries in, 259; improvements in the, 358
Glasnevin, notes from, 61, 165, 353, 421
Glover, Mr. T. A., retirement of, 21
Gloxinias, 128
Gnidia polystachya, 421
Godetias, 147
Godfrey, Mr. W. J., 384
Goldenhill, Stoke-on-Trent, proposed recreation ground at, 411
Gomphrena globosa (Globe Amaranth), 63
Gooseberry, a new species of, 383
Gordon-Lennox Cup for fruit, award of the, 244
Gorgona Island, the flora of, 294
Gosden, Mr. C., presentation to, 363
Gourley, J. H. (*Text-Book of Pomology*), 144
Grain, imports of, 20
Greenhouses, the heating and ventilating of, 338, 377
Grevillea rosmarinifolia, 125
Grossularia (Ribes) echinella, 383
Guildhall, the, 363
Gunnera magellanica, 297
Gypsophila elegans, 128

H

Habenaria virescens, reversion in, 57
Hardy flower border, 22, 39, 59, 71, 94, 127, 143, 215, 231, 271, 282, 298, 316, 333, 368, 387, 404, 420, 435
Harris, Mr. Charles, 176
Hayes, Mr. T. R., 228
Hay fever, 159
Hazel, big-bud mite of, 393, 413, 428
Hebenstretia comosa, 165
Hedges, evergreen, 305
Heeria elegans, 14
Helianthemum lunulatum, 253
Helianthemums, late-flowering, 163
Helichrysum bracteatum, 184
Heliotropium peruvianum, 165
Hertfordshire: horticultural education in, 251: the necessity for lime or chalk in, 191
Hibiscus in cold districts, the, 356
Hibiscus Manihot, 212; H. trionum, (syn. H. africanus), 212
Hoeing, 13
Hop, an endemic peronospora on the, 265
Hop crop, the, 122, 294
Hornibrook, Murray (*Dwarf and Slow-growing Conifers*), 301
Horticultural education in Hertfordshire, 251
Horticulture at the British Empire Exhibition, 6, 28, 62, 74, 99, 133, 168, 266, 286
Humea elegans, 212, 371
Hunnemannia fumariaefolia, 232
Hyacinth, beds in a formal garden, 123
Hydrangeas, blue, 312
Hypericum nummularium, 435; H. reptans, 391

I

Iberis coronaria, 232
Impatiens, 233
Imperial Botanical Conference, 64, 77, 100, 133, 152, 170, 185, 200, 213, 238
Indoor plants, 10, 41, 93, 145, 269, 295, 313, 334, 352, 371, 409
International Spring Flower Show at Haarlem, 1925, 207
Inula Royleana, 127
Ionopsidium acaule, 233
Ipomoeas, 252
Iris garden, the, 11
Iris germanica, replanting, 11
Iris gracilipes, 179: I. tectorum, 212; I. unguicularis, 281, 384.

J

Jacob, Rev. J. (*Hardy Bulbs for Amateurs*), 322
Jamaica, the Banana industry of, 121
Jeffery, Mr. James, 312
"Journal" of the Royal Society of Arts, 383
Judging artistic exhibits at flower shows, 181
Jugo-Slav park, competition for the design of a, 328, 399
Juvenile employment, 399

K

Kaempferia rotunda, 371
Ken Wood, 363
Kew Gardens: effects of fog at, 432; Pyruses and autumn-flowering shrubs at, 192; Rhododendrons in flower at, 244; sale of official publications in, 54; the new Rose garden at, 29; winter-flowering Begonias at, 384
Kirengeshoma palmata, 233, 351
Kitchen garden, the, 5, 23, 41, 56, 73, 93, 126, 147, 163, 179, 195, 211, 231, 247, 263, 281, 297, 315, 331, 351, 367, 387, 419, 434
Kniphofia comosa, 383
Kochia trichophylla, 299

L

Labels in public parks, descriptive, 193
Laelia anceps, 42
Laelio-Cattleya Brilliant, 349; L.-C. Colmaniana, 283; L.-C. Epic, 319; L.-C. Maisie, 91
Lathyrus azureus, 299; L. odoratus, 299; L. Sibthorpii, 282
"La Tribune Horticole," 400
Lawn-mower, prize for an all-French motor, 208
Leaf-mould, 90
Leaves, the contribution of, to the plant, 141
Leek, the, 134
Leptosiphon Androsaceus and L. roseus, 334
Leptosyne Stillmannii, 334
Leycesteria formosa, 78
Lilies, Arum, out-of-doors, 367
Lilium Farreri, 33; L. giganteum, 179, 218
Liliums from seeds in Ontario, 320
Lily of the field, the, 439
Lily season in Scotland, 217
Lime or chalk in Hertfordshire, the necessity for, 191
Linarias, 334
Linnean Museum in Upsala, a, 363
Linum grandiflorum, 334
Lysimachia Henryi, 368
London parks and open spaces, the, 191
London School Gardening Association, 328
Lonicera japonica var. Halliana, 391; L. nitida, 305, 377; L. pileata var. yunnanensis, 369; L. syringantha, 197
Loughborough, horticultural conference at, 49
Luculia gratissima, 295
Lulworth Cove, 70
Lupinus Paynei, 59

M

MacGregor, Mr. D., 106
Macself, A. J. (*A Real A.B.C. of Gardening*), 357
Maiden, Mr. Joseph Henry, 400
Manchester parks, improvements in the, 335
Mange-tout, 289, 323
McGredy, Mr. Samuel, 2
McMillan, Mr. A., presentation to, 54
Maidenhair Fern, a hardy, 122
Malby, the Mr. late R. A., 120 136
Manuring for early crop production, 1
Marantas, 109
Martineau, Mrs. Philip (*Gardening in Sunny Lands*), 374
Maurandia (syn. Lophospermum), 371
Meconopsis heterophylla, 371
Medals, the R.H.S., 327
Melchet Court, the big vine at, 175
Melon Victory, 95
Mertensia primuloides, 57; M. sibirica, 333, 360
Michauxia campanuloides, 404
Micromeria croatica, 368
Midland Agricultural and Dairy College, 228
Milber Pine Woods for the nation, 54
Millais, J. G. (*Rhododendrons and the various hybrids*), 105
Miltonia hybrids, 247
Mimosa pudica, 404
Mimulus bartoniana, 282
Mina lobata, 371
Ministry of Agriculture, changes at the, 327
Mistleto, 435; as a cultivated plant, 335
Monetary gift to an agricultural college, 106
Montrose Horticultural Society, 399
Moray Field Club, 53
Morgan, Prof. T. H., awarded the Darwin medal, 328
Morocco, phosphates from, 294

N

Naegelia, 63
Napthalene as a fumigant for indoor pests, 121
National Diploma in Horticulture, award of the, 70
National Institute of Agricultural Botany, 399
National Rose Society's membership, 400
Neal, Mr. E., 160
Nectarine tree, a transplanted, 169
Nemesias, 404
Nemophila, 405
Nerine Bowdenii, 254, 267
Nertera depressa naturalised in Scotland, 360
Nether Warden, Cypripediums at, 420
New Zealand, a national botanic garden for, 415
New Zealand Institute of Horticulture, 243
Nicotiana affinis, 405
Nierembergia frutescens, 433
Nigella damascena and N. hispanica, 433
Norton, J. B. S. (*Seven Thousand Dahlias in Cultivation*), 266
Nursery Notes: **Cant** and Co., Frank, 132; **Daniels** Bros., Norwich, 85; Dobbie and Co., Mark's Tey, 184; Drayton Manor, Chichester, 13; **Jones**, Mr. H. J., Lewisham, 338; **Laxton's** Bros., Bedford, 32; Low and Co., Stuart, Enfield, 376; **Notcutt**, Mr. R. C., Woodbridge, 287; **Sutton** and Sons, seedling Chrysanthemums at, 411; **Wells**, Mr. W., Junr., Merstham, 265
Nuttall, G. Clarke (*Trees and How They Grow*), 237

O

Oaks as ornamental trees, 383
Obituary: **Bates**, John, 206; Blaxill, William Charles, 292; Bodger, John, 292; Britten, James, 275 Brook, Edward, 67; Browne, William, 414; **Dixon**, D. R., 430; Donald, George, 52; Dray, George, 88; Dunn, James, 258; **Dunn**, John, 140; **Fraser**, Luke, 67; **Grieve**, James, 226; **Hemsley**, Dr. W. B., 275; **Inglis**, Alexander, 326; **Kidston**, Dr. Robert, 67; **Lynch**, R. Irwin, 414; **Malby**, Reginald, 120, 136; Matthews, Mrs. W. H., 190; McAlpine, Prof. A. N., 414; **Perkins**, John Edward, 52; Piper, Alderman R., 52; **Quainton**, E. J., 36; **Taylor**, Alfred, 326; **Veitch**, Sir Harry J., 19; **Waterer**, Anthony, 88; Wood, S. C., 67
Odontoglossum Aglaon, 9; O. crispum Lady Jane, 25; O. Figaro, 389; O. Minotaur, 389; O. Rêve d'Or, 370; O. Souvenir Pantia Ralli, 42
Odontoglossum crispum, the first, 433
Odontoglossum novelties from Hayward's Heath, 389
Œnothera, 249
Okra or Gombo, 393
Olearia Forsteri, 305
Onion, the, 240
Onion Excelsior, 412
Onions for autumn sowing, 359, 493
Ontario, Liliums from seeds in, 320
Orchards, Clyde, 89
Orchid houses, the, 4, 22, 40, 56, 72, 92, 126, 146, 162, 178, 194, 210, 230, 246, 263, 280, 296, 314, 330, 350, 366, 386, 402, 418, 434
Orchid notes and gleanings, 9, 25, 42, 57, 91, 145, 163, 212, 247, 283, 319, 349, 370, 389, 405, 433
Orchids: at Knightsbridge, 319; at Wembley, 111; new hybrid, 42, 212, 370
Orchis hircina, 370
Ostrowskia magnifica, 14
Osmanthus Delavayi, 94
Oxalis obliqua, 272
Oxford, new public park for, 317

P

Pachysandras, 368
Paeonies, herbaceous, 298, 387, 428
Palm seeds, on packing, 399
Palms of the Riviera, 42, 197
Paris Chrysanthemum Committee, 176
Park, gift of a, 229
Parks and gardens, public, 282, 299, 317, 335, 358, 377, 411, 426
Parsley, the, 64
Parsnip, the, 48
Payne, C. Harman (*The Florist's Bibliography*), 58
Peach Thames Bank, 375
Peach trees at Wrotham Park, Barnet, 375
Pears: Beurré Bedford, 201; Comte de Paris, 412; two excellent, 201
Peas: late, 241; sugar, 218, 272
Pentstemon cordifolius, 332
Pernettya mucronata, 331
Pernettyas, 377
Perovskia atriplicifolia, 211
Phlox subulata Gaynor Adams, 128
Phloxes, eelworm disease of, 175
Phosphates from Morocco, 294
Phylloxera, an experience with, 393
Physostegia virginiana, 368
Picea orientalis, Chermes pini on, 388
Pineapple crowns, checking the growth of, 255
Pine Chermes in the Royal Gardens, Kew, 388
Pinetum, a new, 337
Pinguiculas, 94
Pinus rudis, 32, 86
Piptanthus nepalensis, 31
Plant-breeding and seed-testing at Wembley, 28
Plant-propagation, conference on, 54
Plants: Christmas, in Covent Garden, 428; classification of flowering, 8, 44; decorative for Christmas, 352; for a north aspect, 352; for the warm house in winter, flowering, 334; in bedding schemes, tall, 186; in bloom on New Zealand's shortest day, 252; importation of, into Canada, 207; in winter, protecting, 401; under glass, 4, 22, 40, 56, 72, 92, 126, 146, 162, 178, 194, 210, 230, 246, 262, 280, 296, 314, 330, 350, 366, 386, 402, 418, 434; which remain steadfast, 423
Plants New or Noteworthy:—Atraphaxis Billardieri, 43; **Bruns**vigia Josephinae, 313; **Clero**dendron ugandense, 268; **Davidia** Vilmoriniana, 183; **Elaeocarpus** lucidus, 209; Euonymus yedoensis, 408; Evodia quercifolia, 303; **Fraxinus** americana ascidiata, 335; **Rosa** Banksiae hyb. di Castello, 73
Platanus digitata and P. cantabrigensis, 250
Pleroma macranthum, 313
Plum crop, the, 54
Plum from Russia, a new, 312
Plums: 170; Golden Reine Claude, 312; late, 392; Washington, 201
Pockett, Mr. T. W., 328
Podophyllum Emodii, 404
Poison sprays, a new danger from, 348
Polemonium caeruleum variegatum, 94
Pollen, the vitality of dried, 364
Polygonum vaccinifolium, 245
Potash, Alsatian, 277
Potato competition, a, 393
Potato crop, the, 260, 348; in Scotland, 278, 358, 399
Potato research at Wembley, 168
Potato Sharpe's Express, cropping capacity of, 202, 270, 324
Potato tests, Scotch seedling, 244
Potato, the degeneration of the, 347
Potato trials: in Ayrshire, 364; in Cornwall, 227
Potato tuber, heavy yield from a single, 260
Potato yield, increasing the, 122
Potatos: black heart of, 244; dearer, 312; for exhibition and general utility, 217; prices of, 160; the manuring of, 384
Poterium obtusum, 231
Primula marginata, 408; P. Pauliana, 364; P. secundiflora and P. Vittata, 435
Pruning, 259
Pruning cuts and frost, 358, 394
Publications received, 3, 39, 90, 123, 143, 177, 245, 295, 365, 385, 417
Pulmonaria arvernensis, 316
Pycnostachys Dawei, 353
Pyrford Court, Woking, 45; the Blue Garden at, 347
Pyrus lagenarius, 400
Pyruses and autumn-flowering shrubs at Kew, 192

Q

Quanjer, Prof. H.M., honour for, 176
Quercus Turneri, 393

R

Railway station gardens competition, 347
Ranunculus gramineus and R alpestris, 102
Ranunculus, giant-flowered, 59
Rattan, a record, 228
Rawes, Mr. A. N., 38
Red spider, 70

Rhododendron discolor, 5; R. Falconeri, 311; R. glaucum, 370; R. Nuttallii, 1j
Rhododendrons, 12, 24, 46, 62, 125, 199, 236, 253, 264, 286, 304, 320, 332, 356; Catawbiense hybrid, 94, in flower at Kew, 244
R.H.S. Fruit and Vegetable Show, 141
Robinia Pseudacacia Decaisneana, 39
Rockery plants: a few choice, 317; for late summer and autumn planting, 297; of summer, 144
Rodgersia Purdomii, 23
Rosa Banksiae hyb. di Castello, 72
Rose, a new American, 191
Rose garden: 55, 91, 149, 177, 198, 232, 266, 281, 319, 385, 403; a public, for London, 90; new, at Kew, 29
Rose hips, decorative value of, 403
Rose, J. N. (*The Cactaceae*), 180
Rose rust, 289
Rose season in southern Scotland, 115
Rose trials at Bagatelle, 312
Roses: Betty Uprichard, 177; Columbia, 177, 429; Dorothy King, 245; Ethel Chaplin, 403; Gorgeous, 385; Lady F. Stronge, 319; Margaret Dickson and its white rivals, 149; Max Graf, 259; Mrs. Henry Morse, 91; Phyllis Bide, 281; Red Premier, 319; Zéphirine Drouhin, 149
Roses: a method of propagating, 249; at Kew, 249; at the N.R.S. metropolitan show, seedling, 55; at Wembley, 286; die-back disease of Rambler, 374; effect of rain on white, 218; for arches, 232; 249; for light soils, perpetual-blooming, 266; hybrid Musk, 198; transported by air from Europe to America, 312
Rosmarinus officinalis prostrata, 368
Rothamsted Experimental Station, 207
Royal Botanic Garden, Calcutta, 176
Royal Horticultural Society of Aberdeen, centenary of, 142
Royal Horticultural Society: defective lighting of the hall of the, 431; examinations of the, 293; fruit show, 141, 340; medal awards, 327, 365; proposed new hall, 272
Royal Society of Arts, 20
Rubus deliciosus, 5

S

SALIX BABYLONICA AT KEW, 437; S. Balfouri, 437
Salvia dichroa, 333; S. Greggii
Sassafras tree at Cannizaro, the, 96 as a wall plant, 324; S. splendens, a white, 208
Saxifraga Huetiana, 74, 193; S. Irvingii, 267; S. peltata, 368
Scabiosa Columbaria rosea, 215
Schedule revision, 122
Schizanthus Dawkins' hybrid, 103
Schizophragma integrifolia, 231
Scotland: agricultural research and plant-breeding in, 348; garden notes from S.W., 24, 43, 283, 353; railway station gardens in, 364; the Rose season in southern, 115
Sedum coeruleum, 245; S. yunnanense valerianoides, 165
Sedgwick Park, the water garden at, 422
Seed-bed, diseases of the, 243
Seeds: awards for British at Rio de Janiero, 38; the germinating power of, 227, 269, 324
Self-sterility, 364
Senecio, 404
Shrubs: at Wembley, 266; hardy, at Ottawa, 311; some good early autumn, 235
Sidalcea Sussex Beauty, 231
Silene alpestris flore-plena, 57; S. pusilla, 368
Silphium albiflorum, 353
Smith, Mr. J. T., 278
Snell Memorial Medal, award of the, 176
Snowdrops: 27, 65, 74; deep planting of, 197; from seeds, 340
Societies:—Aberdeen Horticultural, 137; Antwerp International exhibition, 205; Ayrshire Agricultural, 309; Ayrshire Chrysanthemum, 397; Banffshire Horticultural, 157; Bangor Horticultural, 174; Bermondsey Municipal Flower Show, 204; Birmingham Chrysanthemum, 379; Blackpool and Fylde Horticultural, 378; Brentford Allotment, 87; Brighton, Hove, and Sussex Horticultural, 344; British Florists' Federation, 87, 242, 310, 396, 414, 440; Cardiff and County Horticultural, 258; Cardiff and District Gardeners', 362; Cheltenham Floral Fête, 17; Croydon Chrysanthemum, 342; Deeside Field Club, 50, 136, 241; Derbyshire Horticultural, 397; Dumfries and District Horticultural, 413; Dundee Horticultural, 190; Elstree and District Horticultural, 67; General Bulb Growers of Haarlem, 173; Glasgow and West of Scotland, 186, 273, 346, 396, 413; Hanley Floral Fête, 103; Hitchin Chrysanthemum, 378; Horticultural Club, 88; Hove Horticultural, 225; Hull Chrysanthemum, 394; Imperial Fruit Show, 308; Kent County show, 66; Kingston, Surbiton and District Chrysanthemum, 362; Lancaster Chrysanthemum, 378; Manchester and North of England Orchid, 50, 103, 242, 307, 396; Mysore Horticultural, 345; National Carnation and Picotee, 86; National Chrysanthemum, 241, 309, 341, 397, 440; National Dahlia 67, 202, 379; National Hardy Plant, 190; National Potato, 361; National Rose, 15, 203; National Sweet Pea, 49, 308; Newcastle and District Horticultural, 103, 378; Newport (Mon.) Gardeners', 17; Northampton Horticultural, 157; Northern Counties Fruit show and Congress, 274; Orchid Club, 274, 396; Peterborough Agricultural, 50; Reading and District Gardeners', 18, 87, 225, 273, 310, 342, 397, 413, 439; Royal Caledonian Horticultural, 50, 136, 306, 362, 439; Royal Horticultural, 17, 33, 65, 87, 103, 154, 173, 188, 219, 255, 272, 389, 306, 324, 360, 395; Royal Horticultural of Aberdeen, 398; Royal Horticultural of Ireland, 86; Royal Horticultural of Perthshire, 173; Royal Lancashire, 120; Royal Oxfordshire Horticultural, 86, 379; Royal Scottish Arboricultural, 224, 307; Royal Tunbridge Wells Horticultural, 51; Saffron Walden, 87; Sandy Horticultural, 173; Scottish National Sweet Pea, Rose and Carnation, 120, 138; Shropshire Horticultural, 138; Smithfield Club, 413; Société Nationale d'Horticulture de France, 313; Société Pomologique de France, 307; Southport Floral Fête, 156, 171; Streatham Rose and Sweet Pea, 35; United Horticultural Benefit and Provident, 67, 155, 225, 306, 345, 362, 439; Whitehall and District Horticultural, 136; Windsor, Eton and District Rose and Horticultural, 35; Wolverhampton Floral Fête, 35; York Gala, 20; Yorkshire Agricultural, 103
Solanums, 10
Soot and wireworm, 70
Southend Parks: annual outing of the staff of the, 299; Chrysanthemums at the, 392
Southport Floral Fête, 159, 348
Spiraea bracteata, 31; S. discolor, 437; S. palmata, 58
Spooner, Mr. Herman, 70
Sprays, a new danger from poison, 348
Spring of 1924, 12
Staphylea colchica, 5
Stauropsis lissochiloides, 145
Stephens, Mr. W., 122
Stocks, 352
Strawberry The Duke, 31, 65, 86, 102, 136
Strawberries, 102; the cultivation ot, 277
Styrax Wilsonii, 317
Sugar Beet cultivation: British, 384; in northern Scotland, 141
Swedish garden-craft annual, a new, 313
Sweet Pea, a new American, 141
Sweet Pea Sunshine, 141
Sweet Peas 299; height of, 377; select varieties of, 263
Symphoricarpus racemosus var. laevigatus, 161
Syringing fruit trees under glass, 85

T

TANNOCK, DAVID (*Rock Gardening in New Zealand*), 357
Taylor, Mr. H. V., in America, 208
Thunbergia laurifolia, 295
Tomato growing under glass, 121
Toptchider Park, Belgrade, competition for design of, 399
Trade notes, 18, 157, 276
Transatlantic visitors to Wembley and English gardens, 9
Trees and shrubs, 5, 31, 39, 78, 94, 125, 161, 184, 197, 211, 235, 253, 261, 285, 305, 316, 331, 355, 369, 391, 408, 437
Trees: as aerials for wireless telegraphy, 228; as weather forecasters, 399; at Wembley, 99
Trials grounds for the north, 176
Trollius, 23
Truffaut's nursery, 54
Tsuga Pattoniana, 48
Tubb, Mr. John T., 54
Tulip Arethusa, 202
Tulip bases, 103
Tulips: fasciated, 48; in Dublin gardens, 14; pink and rose, 123; scarlet, crimson and red, 110, 164; white, 47, 74; yellow, 6, 32, 48, 58
Tunica Saxifraga, 351
Tyntesfield Orchid collection, the, 159

U

UDALE, MR. JAMES, 416
Uganda, the Banana in, 438
Urospermum Dalechampii, 215

V

VANDA HOOKERIANA, 247
Vegetable garden, 48, 64, 101, 134, 170, 201, 217, 240, 270, 323, 358, 375, 393
Vegetables under glass, raising, 375, 412
Veitchberry, the, 271
Veitch, the late Sir Harry J. 19, 37
Verbena venosa, 245, 267, 279, 306, 340
Veronica Fairfieldii, 316; V. repens, 39
Viburnum macrocephalum, 165; V. rhytidophyllum fruiting, 218
Victoria Park, Bath, alterations at, 299
Vienna Horticultural Exhibition, 312
Vine at Melchet Court, the big, 175
Vine borders, the renovation of, 306
Vine, the Fontainebleau, 312
Vines, planting young, 13
Viola bosniaca, 391; V. gracilis Lady Crisp, 128; V. Saughton Blue, 271
Violas or tufted Pansies, 284
Vitis Thunbergii, 305
Vuylstekeara Edna var. Normandy, 33

W

WARD'S, MR. KINGDON, EIGHTH EXPEDITION IN ASIA, 97, 148, 214, 300
Warren House, Surrey, 131
Warwickshire County Council's fruit plots, 2
Washington, George, as a landscape gardener, 208
Water garden at Sedgwick Park, 422
Watkins, Mr. and Mrs. Alfred, golden wedding of, 176
Weather conditions that effect fertility, 14
Weatherwax, Paul (*The Story of the Maize Plant*), 237
Weeds, a year of, 259
Welbeck Abbey, 216
Welsh garden, notes from a, 10, 129, 196, 298, 407
Wembley: annuals at, 74; Carnations at, 62; Chrysanthemums at, 228; Orchids at, 111; plant-breeding and seed-testing at, 28; Roses at, 286; shrubs at, 266; trees at, 99
Wheat: a new British, 53; Yeoman II, 228
Wigan Parks, new superintendent for, 192
Wild garden, the, 352
Williams, Mr. H., 90
Willows, the, 390; at Kew, 437
Wimbledon, improvements at, 358
Wisley: notes from, 60, 183, 197, 250, 283, 316; presentation at, 363; Rose awards, 424; Rose trials at, 227; trial of Lettuces under glass at, 106
Wolley-Dod, A. H. (*The Roses of Britain*), 200
Woodhouse Estate as a public park, 335
Woodland, gift of, to the public, 54
Woodlands, the development of estate, 311
Woodlice, poison bait for, 122
Woollard, Mr. George, retirement of, 411
Worthing, improvements at, 358
Wright, Richardson (*The Practical Book of Outdoor Flowers*), 410
Wrotham Park, Barnet, Peach trees at, 375
Wytham, gift of land as a public park for, 368

X

XANTHOCERAS SORBIFOLIA, 78

Y

YEAR, A WONDERFUL GARDEN, 207
York Gala, 20

LIST OF ILLUSTRATIONS.

A

Address presented by the Judges of the Southport Floral Fête to Alderman Aveling, 348
Alnus viridis var. mollis, 355
Amorphophallus Titanum, 301, 302, 303, 304
Antirrhinum diseases, 150, 151
Apples: Barnack Orange; 427; Herring's Seedling, 289
Ashton, Mr. Ben, portrait of, 261
Asperula suberosa, 329
Atraphaxis Billardieri, 43

B

Baker, Mr. F., portrait of, 244
Bananas in flower and fruit in Uganda, 438
Bastin, Mr. W. L., portrait of, 208
Begonia Lloydii, varieties of, 109
Blunt, Mr. Henry, portrait of, 432
Brunfelsia latifolia in the Sydney Botanic Gardens, 401
Brunsvigia Josephinae flowering in the open at Cambridge Botanic Gardens, 313

C

Campanula Portenschlagiana, 297
Carnation Myrtle Pettigrew, 75
Cattleya Tagus var. Excelsior, 163
Chermes pini on Picea orientalis, 388, 389
Chrysanthemum Envy, 365; C. Lichfield Peach, 229; C. Mabel Weston, 315; C. Mrs. R. Luxford, a fine specimen plant of, 349; C. Reginald A. Roots, 263; C. Sunburst, 333; C. Thomas W. Pockett, 331
Chrysanthemums exhibited by Messrs. Vilmorin-Andrieux and Co. at the Paris show, 343
Chrysogonum virginianum, 107
Clerodendron ugandense, 269
Colombo garden, a: entrance gates to, 112; formal arrangements of beds and lawns in, 115; scene in, 113
Cranfield, Mr. W. B., portrait of, 142
Crassula columnaris at Glasnevin, 421
Crataegus tanacetifolia: fruiting branchlet of, 284; specimen tree in the Cambridge Botanic Garden, 285
Cypripedium Cappamagna var. Fred K. Sander, 409; C. Crusader, Westonbirt variety, 405
Cyrtanthus helictus, 93

D

Dahlia Mrs. Skevington, 201
Davidia Vilmoriniana, fruiting branch of, 183
Deutzia setchuenensis in Glasnevin Botanic Gardens, 165
Draps, M. Emile, portrait of, 294
Dunn, Mr. John, portrait of the late, 140

E

Elaeocarpus lucidus, 209
Ellis, Mr. T. E., portrait of, 192
Erythronium revolutum var. White Beauty, 419
Eucalyptus psylla, larva of, 425; nymphal stage, 425
Eucryphia Nymansay, 167
Euonymus yedoensis, 407

F

Forest of Picea, Willow and Birch, with Taliense Rhododendron, in China, 293
Fraxinus americana var. ascidiata, 335

G

Gates at Warren House, Coombe Wood, Kingston, 417
Gaultheria pyroloides, fruiting spray of, 161
Genista cinerea, 5
Godetia Lavender, a pot plant of, 147
Godfrey, Mr. W. J., portrait of, 384
Grape Cote House Seedling, 272

H

Habenaria virescens, reversion in, 57
Harris, Mr. Charles, portrait of 176
Hayes, Mr. R. T., portrait of 228
Helenium Mrs. Bradshaw, 195
Hemerocallis hybrida Lady Hesketh, 71
Hibiscus Waimeae, 193
Hoheria populnea lanceolata, 125
H.R.H. The Prince of Wales, portrait of, 364
Hyacinths in a formal garden, 123

I

Iris gracilipes, 181
Iris Kaempferi on the lakeside at Pyrford Court, 45

J

Jeffery, Mr. J., portrait of, 312

K

Kew: general view in the new Rose garden at, 29; Weeping Willow overhanging the Lily Pond at, 437
Kirengeshoma palmata, 351

L

Laelio-Cattleya Queen Mary, Westonbirt variety, 295
Lewisia Howellii, 317
Lhasa, a valley on the road to, 214
Lilium Farreri, 61; L. giganteum at Merton Hall, Norfolk, 179; L. longiflorum formosum, 320; L. tigrinum · L. maximowiczii, 321; L. tigrinum · Willmottae, 321
Lonicera pileata, var. yunnanensis, 369

M

MacGregor, Mr. D., portrait of, 106
Maiden, Mr. J. F., portrait of, 400
McGredy, Mr. Samuel, portrait of, 2
Mistleto, a cluster of, 435

N

Neal, Mr. E., portrait of 160
Nectarine Pineapple, a transplanted tree of, 169
Nertera depressa naturalised in a tennis lawn in Scotland, 359

O

Odontoglossum crispum: Blunt's plant, reproduced from the original painting, 433; O. c. Oakfield Sunrise, 25
Onion, Ronden Ayenyn, illustration of the, 240
Orchis maculata rosea at Glasnevin, 62
Ostrowskia magnifica, 14

P

Paeony Madame Emile Lemoine, 387; P. Mme. Sarah Bernhardt, 3
Peach Rivers's Early York at Wrotham Park, Barnet, a fine specimen of, 375
Platanus cantabrigensis; fruiting branch of, 251; leafy branch, 253; P. digitata: fruiting branch of, 251; leafy branch, 250
Polystichum angulare divisilobum nitescens grande, 232
Potentilla dahurica var. manchurica, 233
Primula siamensis, 261
Pseudotsuga japonica, shoot with cone of, 337
Pyrus pinnatifida, fruiting branch of, 235

R

Ranunculus, giant Florentine, 58, 59, 63
Rawes, Mr. A. N., portrait of, 38
Richardias (Arum Lilies) flowering out-of-doors in Staffordshire, 367
Rodgersia Purdomii, 23
Roehampton, Ceylon: views in the gardens at, 371, 372, 373
Rosa Banksiae hyb. di Castello, 73; R. mirifica, 9
Rose garden at Kew, general view of the new, 29
Roses: Cecil, 55; Bedford Crimson, 41; Columbia, 177; Ethel Chaplin, 403; Gorgeous, a bed of, at Kew, 385; John Russell, 149; Lady Alice Stanley in the new Rose garden at Kew, bed of, 31; Lady F. Stronge, 319; Mabel Turner, 21; Marcia Stanhope, 7; Moonlight, a bed of, in the Royal Gardens, Kew, 199; Mrs. Barraclough, 145; Mrs. Henry Morse, 91; Norman Lambert, 211; Phyllis Bide, 281
Roses exhibited by Messrs. Alex. Dickson and Sons, 11

S

Salix babylonica, 437; S. Caprea × S. lanata, catkins of, 391; S. japonica var. Lavallei, catkins of, 390
Sedgwick Park, Horsham, formal water garden at, 423
Sassafras officinale: at Cannizaro, Wimbledon: summer view, 96; winter view, 97; botanical details of, 99
Saxifraga Irvingii, 267
Schizophragma integrifolia, 231
Silphium albiflorum, 353
Silver challenge trophy offered at the Southport show, 85
Smith, Mr. J. T., portrait of, 278
Snowdrops, an artistic and natural grouping of, 27
Southport Floral Fête: Messrs. Dickson and Robinson's prize collection of Dahlias at, 185; Messrs. J. Cypher and Sons' group at, 168; Messrs. Sutton and Sons' group at, 171
Spooner, Mr. Herman, portrait of, 70
Stephens, Mr. W., portrait of, 122
Sweet Peas exhibited at the Aberdeen Centenary Show, 143

T

Thuya gigantea, 292
Tsangpo river, crossing the, 215
Tubb, Mr. J. T., portrait of, 54
Tulip Carrara, 47

U

Udale, Mr. James, portrait of, 416

V

Vanda Hookeriana, 245, 247
Vegetables exhibited by the Hon. Vicary Gibbs at Shrewsbury show, 153
Veitch, Sir Harry J., portrait of the late, 20
Viburnum macrocephalum in Glasnevin Botanic Gardens, 165

W

Warren House: entrance gates at, 417; loggia and fountain terrace, 127; the Japanese garden, 129; the old English garden, 133; view of the lake and waterfall, 131
Welbeck Abbey: views in the garden at, 216, 217, 218
Williams, Mr. Harry, portrait of, 90
Willow overhanging the Lily pool at Kew, 437

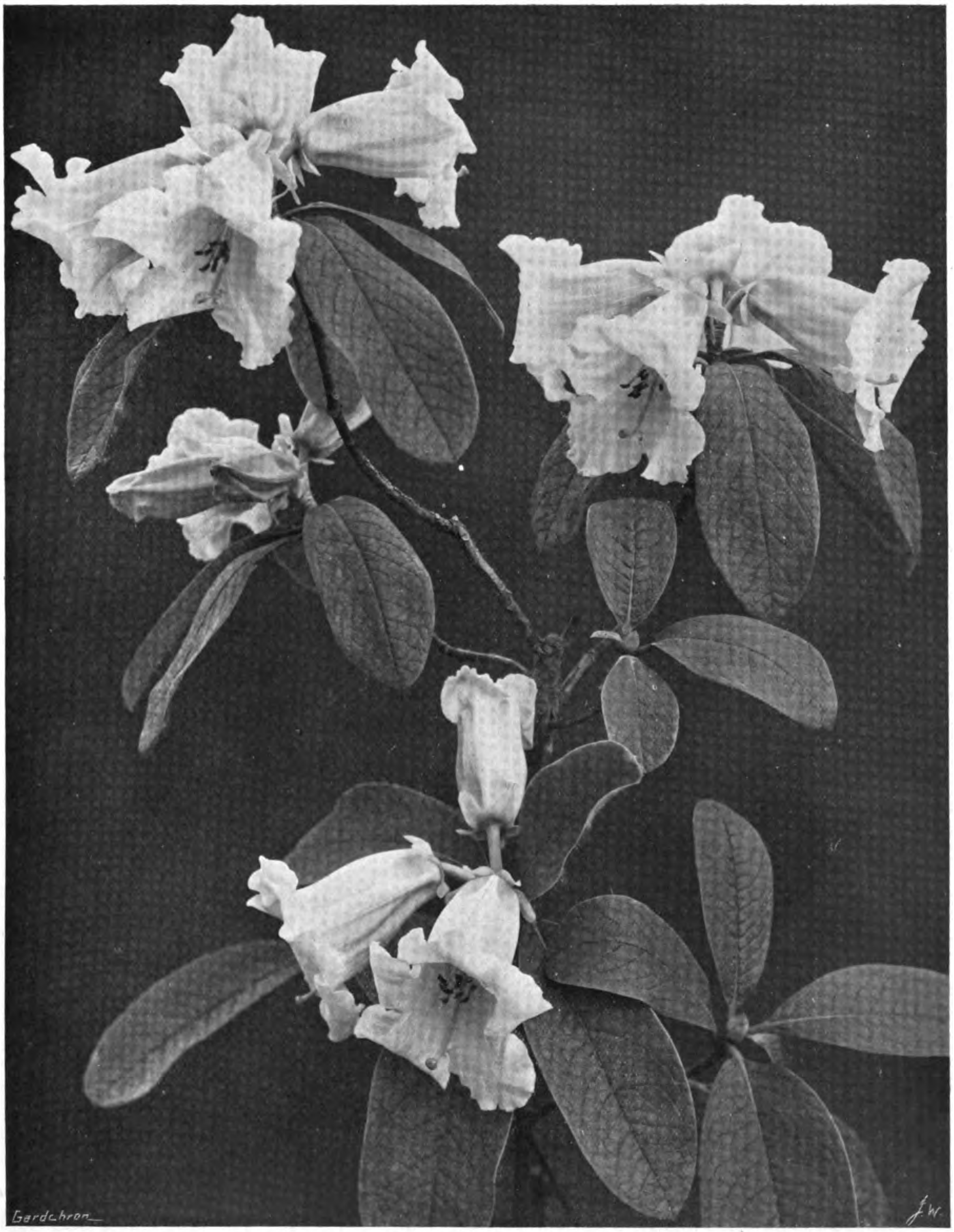
X

Xanthoceras sorbifolia: flowering spray of, 77; tree of, in the Cambridge Botanic Gardens, 78

SUPPLEMENTARY ILLUSTRATIONS.

Abies brachyphylla, branch and cones of (Dec. 20)
Begonia Lady Ann (October 18)
"Blue" Garden at Pyrford Court, Woking (November 22)
Cedrus atlantica glauca, cones of (October 4)
Erinacea pungens (August 9)
Kniphofia comosa (December 6)
Rhododendron Falconeri (November 8)
Rhododendron Nuttallii (July 5)
Rose Penelope (September 20)
Symphoricarpus racemosus var. laevigatus (September 6)
Warren House, Kingston, Surrey, the terrace walk at (August 23)
Water-Lily pool, Pyrford Court, Woking (July 19)

Supplement to The GARDENERS' CHRONICLE.


Gardchron
J.W.

RHODODENDRON NUTTALLII.

THE Gardeners' Chronicle

No. 1958—*SATURDAY, JULY* 5, 1924.

CONTENTS.

Amateurs' show at Westminster in 1925 ... 3
Annuals for greenhouse and conservatory decoration 11
Anthericums 3
Books, notices of—
  Manures and Fertilisers 7
  Lawns for Sports ... 7
Bulb garden—
  Yellow-flowering Tulips 6
"Bulletin of the Chamber of Horticulture" ... 2
Carnations, new perpetual-flowering ... 11
Cultural memoranda—
  Hoeing 13
  Planting young Vines 13
Deeside, Royal 2
Flowering plants, the classification of ... 8
Foreign Correspondence—
  Ostrowskia magnifica 14
Forester's golden wedding 3
Fruit plots, Warwickshire's experimental 2
Gardeners and their wives 14
Garden League for devastated France ... 2
Hardy fruit garden ... 13
Heeria elegans 14
Horticulture at the British Empire Exhibition 6
Imperial Botanic Conference... 2
Indoor Plants—
  Campanula Vidalii 10
  Solanums 10
Iris garden—
  Replanting Iris germanica 11
Manchester, horticultural exhibition at ... 2
McGredy, Mr. Samuel 2
Nursery Notes—
  Drayton Manor ... 13
Plants and Plant Products, Imports of ... 2
Rhodododendrons ... 12
Societies—
  Cheltenham Floral Fete 17
  National Rose ... 15
  Newport (Mon.) Gardeners' 17
  Reading and District Gardeners' 18
  Royal Horticultural 17
Spring of 1924, the ... 12
Orchid notes and gleanings—
  Odontoglossum Aglaon 9
Transatlantic visitors to Wembley and English gardens ... 9
Trees and shrubs—
  Cytisus supranubius 5
  Genista cinerea ... 5
  Rhododendron discolor 5
  Rubus deliciosus ... 5
  Staphylea colchica ... 5
Tulips in Dublin gardens 14
Week's work 4
Welsh garden, notes from a 10

ILLUSTRATIONS.

Genista cinerea 5
McGredy, Mr. S., portrait of 2
Ostrowskia magnifica 14
Paeony Mme. Sarah Bernhardt 3
Rosa mirifica 9
Rose Mercia Stanhope... 7
Roses exhibited by Messrs. Alex. Dickson and Sons at the National Rose Society's show 11

SUPPLEMENTARY PLATE.
Rhododendron Nuttallii.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 62·5.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 2, 10 a.m.: Bar. 29.8°: temp. 69°. Weather, Fine.

Manuring for Early Crop Production.

THE use of natural and artificial manures is so widely practised by gardeners that there would seem but little need to descant upon the subject. Yet anyone who has seen the results in crop production which follow from a well-devised system of manuring might say with confidence that even at the present time the production of horticultural crops—vegetables and flowers—would be greatly augmented by an increased use of manures. So far as farmyard manure is concerned this is often a counsel of perfection, for the commodity is not only expensive but often unobtainable, at all events in quantities sufficient for the requirements of the gardens. This fact, however, is only an additional reason why all who cultivate the land intensively should pay the closest attention to the art—which is becoming each year also a science—of supplementing the action of natural manure by the judicious use of artificial fertilizers. Attention has recently been called to this question by Mr. E. Lierke, of Berlin, in a contribution made to the proceedings of the International Horticultural Conference held at Amsterdam in September of last year. In it the author gives the results of extensive experiments on the influence of manuring on the yield and quality of fruits and vegetables. Mr. Lierke points out that yield depends on several factors—the choice of the best varieties, the fertility of the soil and its proper preparation, meteorological conditions during the growing season and a proper system of manuring. He does useful service in pointing out that even when the soil is of the best, maximum yields will not be obtained unless manuring is practised methodically. Nor is it sufficient, as some think, to limit manuring to the application either of farmyard manure only or of artificial manures only. Both should be used, for the action of the one is supplementary to that of the other. The texture of the soil, its water-holding capacity and its suitability as a medium for root-growth depend not only upon its original nature and on systematic and thorough cultivation, but also on continued manuring. The operations which play the greatest part in bringing the soil into perfect condition are first, cultivation, second, liming, third, manuring with stable manure, or failing that, other organic debris, leaf mould, the produce of the compost heap, wool-waste, etc. When these operations have been performed and re-performed at regular intervals the yield will still be below the possible maximum if artificial manures, namely, soluble compounds of nitrogen, phosphorus and potash are not also applied to the land. Mr. Lierke goes so far as to affirm that farmers are better informed of the value of artificials than are gardeners. This is certainly not the case among the market and best professional gardeners of this country, but it is no less certainly true of many of those who cultivate in small gardens. The author makes short work of the contention that the use of artificial manures causes deterioration of quality of fruit and vegetables and points out that the opposite is the case. Grapes, for example, if grown in soil deficient in lime are deficient in sugar and contain an excess of organic acids; fruits grown in soils poor in phosphates not only ripen late but also lack their characteristic and agreeable aromatic flavours. The author recommends that as a rule the addition of potassic and phosphatic manures to the land should take place in autumn and also—of course—that liming should be completed before the onset of winter. Nitrogen manuring may be left to the spring, but if sulphate of ammonia be used it may be put in in the autumn since it is not washed out from the soil by rains, but is absorbed by the soil. Needless to say if the three manures are applied, the materials used must be such as do not interact with one another. The results of the author's experiments supply convincing evidence of the justice of these conclusions. Thus with Kohl Rabi, a complete artificial manure consisting of 1¼ lb. to the square rod of superphosphate and like quantities of sulphate of ammonia and potassium sulphate gave a yield more than double of that obtained from unmanured similar land. Omission of any one of the ingredients led to a reduction of yield in the following ratio: unmanured = 81; complete artificial manure = 193; manure containing no nitrogen = 144; manure containing no potash 177; and manure containing no phosphate = 95. Moreover—and this is a matter for reflection on the part of those who do not systematically use artificial manures—the fully manured crop was ready twelve days earlier than any of the others. A similar forcing effect of a complete artificial manure was observed in the case of Lettuce, which came in eight days before the unmanured plants. This fact is of particular interest to private gardeners in a season like the present. With the general failure of Broccoli during the winter the growing of early Lettuces is particularly important; for Cos or Cabbage Lettuces make one of the very best cooked vegetables and where glass is not available early production of this crop out-of-doors is imperative. Moreover, the yield by the use of complete artificials was increased in the ratio of ninety-three, unmanured to one hundred and sixty-three, manured. Both earliness and increased yield mean, of course, increased return on the outlay and the return much more than covers the cost of the manuring. Even in the case of Beans the complete manure proved profitable. Complete manuring as compared with incomplete and non-manuring gave the following: complete artificials (the sulphate of ammonia was added for the previous crop, the other artificials, potassium sulphate and superphosphate, at the time of sowing), 165; no manure, 105; manure containing no nitrogen, 120; manure containing no phosphates, 113; and manure containing no potash, 127. Despite their powers of fixing nitrogen Leguminous crops are no exception to the rule that yield is increased by the use of a complete manure, though, as will be noted and expected, the phosphates play an even more important part than added nitrogen in increasing yield.

Our Supplementary Plate.—Rhododendron Nuttallii, the subject of our supplementary illustration to this week's issue, is a native of Bhoton and was introduced into this country about half a century ago by a Mr. Booth. The white, waxy flowers are very handsome and the best trusses usually carry about five or six blooms, borne in gracefully not too full corymbs. The beauty of the flower is further enhanced by the delicate green-yellow tint in the interior of the calyx tube whilst the thick, dark green leaves are also of great charm, the undersides being delicately veined with red. In its natural habitat, R. Nuttallii is found at an elevation of four to five thousand feet, but, unfortunately, it has proved to be hardy in only very favoured localities in this country, and even then, blooming as it does in the early months of the year, its flowers are often ruined by frost. The species is therefore to be recommended for the adornment of a cool greenhouse or conservatory rather than for cultivating in the open.

Cider Day at Long Ashton, Bristol.—Invitations are being extended to fruit growers and cider makers by the Agricultural Committee of the University of Bristol to attend on Tuesday, July 15, the display of ciders made during the season 1923-24. The fruit plantations of the Station will also be open to visitors from 11 a.m. to 4 p.m., and during the course of the day the experimental work in progress in the plantations and in the laboratories will be explained by members of the staff.

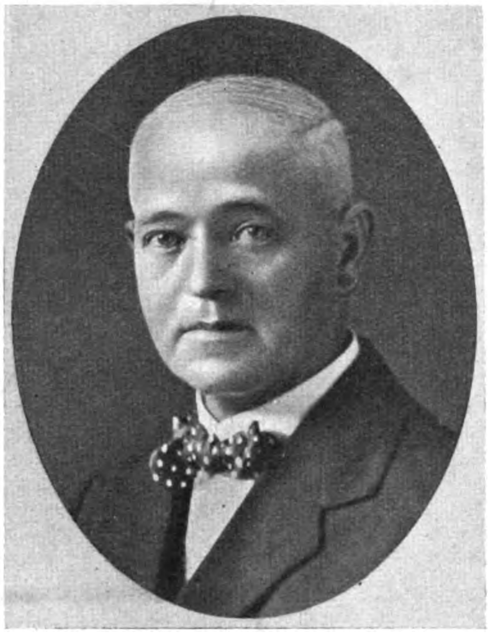
French Chrysanthemum Society.—This Society in its post-war activities seems to be leaving no stone unturned to increase its membership and usefulness. The most recent record is that it has now 1198 members on the roll, inclusive of fifty-nine affiliated societies. In order that the Society's catalogue may be kept up to date, raisers of new seedlings are requested to send their catalogues to M. Reiser, 9, Rue Omer-Louis, à Lyon-Monchat, or to the Secretary, 16, Rue d'Algérié, Lyons, so that their latest novelties may be incorporated.

Bulletin of the Chamber of Horticulture.—The quarterly Bulletin of the Chamber of Horticulture (Vol. II, part 2) contains many interesting features, including the "Technical Notes," which are reports based on applications for advice received by the Technical Committee, which still continues to do very useful work. Mr. Theodore Parker, Hon. Secretary of the above Committee, also contributes a very instructive article on "Scientific Control of Pests and Diseases," which will be continued in future numbers of the *Bulletin*. An appreciation of the work of the Honorary Treasurer of the Chamber, Mr. Chas. E. Pearson, V.M.H., is also given, together with a full-page photograph of this well-known horticulturist. There is also included a report of the London Conference of the Federation Horticole Professionelle Internationale held in 1924, illustrated by snapshots of prominent delegates attending the Chelsea Show and East Malling Research Station. "A Leaf Spot of Carnations" is the title of a short article written by Dr. Sydney G. Paine and another subject dealt with is "The Florists' Telegraph Delivery Association," by Mr. J. S. Brunton. In the "Editorial Notes" a plea is made for national organisation and there are also notes on the exportation of plants to Canada and Potatos to Ireland.

Imperial Botanical Conference.—A conference of immense importance to all the component parts of the British Empire is to be held in London from July 7 to July 16. This is to be known as the Imperial Botanical Conference, and the programme recently circulated suggests that the meetings will prove of great botanical and economic interest, for numerous papers are to be given and discussions on many important economic subjects are also to take place. The President, Sir David Prain, C.M.G., C.I.E., F.R.S., will open the conference on Monday morning, July 7, and in the afternoon "The Physiology of Crop Yield" will be discussed. On Tuesday morning the meeting will be concerned with "The Economic Possibilities of Plant Breeding" and with a discussion on "Nomenclature." In the afternoon of this day "The Value of Selection Work in the Improvement of Crop Plants" will be debated. Other matters which will receive the attention of the conference will be: "The Biological Problems of the Cold Storage of Apples"; "The Best Means of Promoting a Complete Botanical Survey of the Different Parts of the Empire"; "The Relation of Forest Pathology to Silviculture;" "The Survey and Study of Vegetation and Training in Ecological Field Work"; "The Relation of Plant Pathology to Genetics;" "Obscure Plant Diseases of Widespread Occurrence;" "Fungal Attacks on Timber"; and "Education and Research." The conference will close on Saturday morning, July 12, and in the afternoon of that day and until Wednesday, July 16, excursions will be made to the principal research and experimental stations. The headquarters of the conference will be The Imperial College of Science and Technology, South Kensington, and the Secretary is Mr. F. T. Brooks, 31, Tenison Avenue, Cambridge; from whom full particulars may be obtained.

Imports of Plants and Plant Products.—The Ministry of Agriculture has arranged for a conference to be held on Friday, July 18, at the Lecture Hall of the Surveyors' Institution, Great George Street, Westminster, for the purpose of discussing between representatives of the British Empire the scientific principles which should underlie legislation regulating the imports of plants and plant products. The conference will commence at 11 a.m. and invitations have been extended to all members of the Imperial Botanical Conference, the Conference of Empire Mycologists, the Royal Horticultural Society, and the Horticultural Trades' Association. Those who are expected to take part in the discussion include Sir A. D. Hall, Sir David Prain, Dr. Butler, Prof. Bateson, Prof. Ashby, Sir Frederick Keeble, Dr. Shaw, Mr. H. V. Taylor, Mr. Wortley, Mr. J. C. F. Fryer, Mr. Cunningham, Dr. Pethybridge, Dr. Doidge, Mr. F. A. Stockdale, and Mr. L. S. McLaine.

Mr. Samuel McGredy.—It is an appropriate occasion, when Roses are the most conspicuous flowers in gardens, to publish a portrait and a few biographical notes of such a prominent rosarian as Mr. Samuel McGredy, senior member of the firm of Messrs. Samuel McGredy and Son, Royal Nurseries, Portadown, Ireland. Mr. McGredy is well-known to many in this country and his Roses to a still larger number, for he is a successful exhibitor at the metropolitan exhibitions of the National Rose Society and has enriched our gardens with many beautiful new varieties. He has been engaged for nearly fifty years in the raising of new Roses and if only for the popular Golden Emblem his fame would be assured, but in addition he has given us such splendid sorts as The Queen Alexandra Rose, Mrs. Herbert Stevens, Mrs. H. Morse, Florence L. Izzard, Mabel Morse, Mrs. Henry Morse and Emma Wright, of which an illustration was given in our last issue. These are only a small selection of the Roses raised and distributed by Mr. McGredy's firm and so recently as Friday of last week at the National Rose Society's summer exhibition his firm showed several fine novelties. No fewer than forty-six Gold Medals have been awarded by the National Rose Society to new Roses from Portadown. Besides Roses, this Irish firm cultivates large numbers of fruit trees, forest trees, shrubs, herbaceous plants, rock plants and greenhouse plants, and has also a large trade in seeds and bulbs. Mr. McGredy is a prominent Freemason and a Justice of the Peace for the county of Amagh.



MR. SAMUEL McGREDY.

The Warwickshire County Council's Fruit Plots.—The Annual Report for 1923 of the Fruit Plots controlled by the Warwickshire County Council has recently been issued and it is interesting in that it gives a digest of the returns and expenses of running the numerous plots. In spite of the very poor Apple crop last year, the plot devoted to one acre of bush trees of this fruit realised a profit of £42 10s. 10d., the sales bringing in £209 14s. 11d. The average return per tree of the most successful varieties is given and Newton Wonder, which produced a heavy crop, heads the list at £1 6s. 3d., whilst James Grieve, The Queen, Cox's Orange Pippin, and Allington Pippin all realised more than £1 per tree. Apple sucker and the caterpillars of the winter moths were effectively controlled by two successive applications of a wash made of Arsenate of lead, 1 lb. Nicotine extract, 1½ ozs.; Quassia extract, 1 pint; and water, 20 gallons. A severe attack of aphis developed in June and many of the trees had to be sprayed three times with a soap-nicotine wash to keep this pest in check. Experiments were also conducted with Carbolineum—sometimes known as Carbokrimp—and trees sprayed with this preparation in February were practically free from pests throughout the season; during the present year its use has been largely extended. Included in the Report are details of other plots of different sizes in other localities of Warwickshire as well as the returns obtained from demonstration allotments.

Garden League for Devastated France.—The British Committee of the Garden League for Devastated France is appealing for funds to continue and complete the work of restoring gardens for food production in the devastated villages of France. Largely through gifts of tools, vegetable seeds and fruit trees, the League has helped to re-establish the gardens attached to elementary schools, as well as those of the Horticultural Societies and other ruined ground in the devastated regions. Subscriptions may be sent to the Hon. Treasurer of the British Committee, the Garden League for Devasted France, c/o the Mary Ward Settlement, 36, Tavistock Place, London, W.C. 1, or direct to Headquarters. Le Jardin de la France Dévastée, Cité des Oeuvres, Bastion 55, 2, Boulevard Lannes, Paris, XVIe.

On Royal Deeside.—At last it is summer time on Deeside and our Aberdeen correspondent writes that the disagreeable and depressing conditions of the past few months are being amply compensated by the wealth of bloom and foliage that has burst out since summer got the mastery over winter. The royal demesne of Balmoral Castle has a beauty just now unrivalled for many years. Heather bloom is most abundant. and for miles reminds one of a magnificent carpet. The Broom and the Whins make one gorgeous blaze of yellow, but the picture is about a month later than usual. The exquisite beauty of the setting on royal Deeside makes it worthy of a King's Highland Home, but there is one unfortunate circumstance, however, and that is the dearth of bees. The heavy mortality in the hives last year has greatly thinned the numbers of these energetic workers, hence the work of pollination is not so thoroughly done as one would like at this time. One may stand for hours in this district without hearing the slightest hum. Another shortage to be noted this year is of plants which seed themselves after being pollinated by the bee—the Iceland Poppy, and others too numerous to mention. Fortunately there are a few energetic bee-keepers who have replenished their empty hives with new broods, and the latter are now busy fertilising the Black Currants, which promise a heavy crop. There is a fear that many of the Broom and Whin bushes will die out for want of fertilisation, as, in common with other self-seeders, the bee does the fertilising. Therefore the dearth of bees means more than the dearth of honey.

Horticultural Exhibition at Manchester.—In connection with the Royal Lancashire Agricultural Society's show, to be held at Mauldeth Road, Withington, Manchester. on July 31 to August 4, there will be a large horticultural display which will be opened on July 31 and closed on August 2. Very substantial cash prizes are offered in the sixteen classes provided, notably £75 in two prizes for a group of miscellaneous plants; £15 as a first prize for a collection of Sweet Peas; £57 in prizes for a collection of cut Roses, including a first prize of £20; £75 for a collection of hardy perennials, including a first prize of £30 and £15 as first prize for a collection of perpetual-flowering Carnations. Five classes are provided for collections of vegetables. Schedules may be obtained from Mr. Peter Blair, Trentham, Stoke-on-Trent, who is manager of this horticultural section.

An Amateurs' Show at Westminster in 1925.—The Council of the Royal Horticultural Society is making arrangements for holding on June 30th, 1925, in the Society's Hall in Vincent Square, Westminster, S.W. 1., a special show for amateur growers. Special classes for cut Roses, Delphiniums, Sweet Peas, Gladioli, Carnations, hardy Pinks, herbaceous plants and Violas will be included. There will also be classes for greenhouse plants in pots, Orchids and Ferns. Amateur exhibits from all over the United Kingdom will be welcomed and the classes will be arranged to suit the owners of small as well as of large gardens. Schedules giving full information concerning this Show are in preparation and, in a few weeks' time, will be obtainable on application to the Secretary, Royal Horticultural Society, Vincent Square, Westminster, S.W. 1.

Forester's Golden Wedding.—It was a very pleasant party that gathered at Brochdhu, Birkhall, Aberdeenshire, a few days ago, to celebrate the golden wedding of Mr. and Mrs. James Duguid who were married at Girnoc fifty years ago. The worthy couple have resided most of the time on the Royal Estate of Birkhall, adjacent to Balmoral Castle, where Mr. Duguid was forester. He retired from active duties about five years ago. The Rev. J. R. Middleton presided at the gathering, when Dr. Hendry, Inchgeal, on behalf of the family, presented Mr. and Mrs. Duguid with a well-filled wallet of Treasury notes. There were, besides, numerous gifts from friends and relatives.

Appointments for the Ensuing Week.—Sunday, July 6: Wakefield and Northern Tulip Society's meeting. Tuesday, July 8: Royal Horticultural Society's Committees meet; Wolverhampton Floral Fête (3 days); North of England Horticultural Society's show in conjunction with Saltaire Rose Show (2 days); Jersey Gardeners' Society's meeting. Wednesday, July 9: Brighton, Hove, and Sussex Horticultural Society's show (2 days); National Carnation and Picotee Society's show at Ipswich; Peterborough Agricultural Society's show (2 days); Royal Horticultural and Arboricultural Society of Ireland show (2 days); Morley and District Paxton Society's meeting; East Anglian Horticultural Society's meeting; Sheffield Chrysanthemum Society's meeting. Thursday, July 10: National Sweet Pea Society's show at R.H.S. Hall (2 days).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Green Centres in Roses.*—Green centres in Roses are more prevalent this year than usual. The moisture of the season appears to have caused an abundance of sap, which the cold, damp nights have checked in the leaves, many having fallen off, whilst the absence of the sun has also prevented the flower buds from maturing the extra quantity into petals, and the unsightly excrescence has grown under their shelter before the calyx is disclosed. I know of no prevention, and adopt the plan of cutting off, as soon as the green protrusion is visible, all the buds so disfigured. Sometimes half those on a tree must be sacrificed, when the blot in the remainder is generally so much reduced as to be no longer a deformity, and indeed disappears entirely. The flowers retained, as all Rose growers are aware, are then much larger and finer in all respects than if the whole blooms had been allowed to open. *Rosa, Gard. Chron., July 7*, 1849.

Publications Received.—*Commercial Tomato Culture.* By the Lea Valley Correspondent of *The Fruit Grower.* Ernest Benn, Ltd., 8, Bouverie Street, E.C. 4. Price 2s. 6d. net.

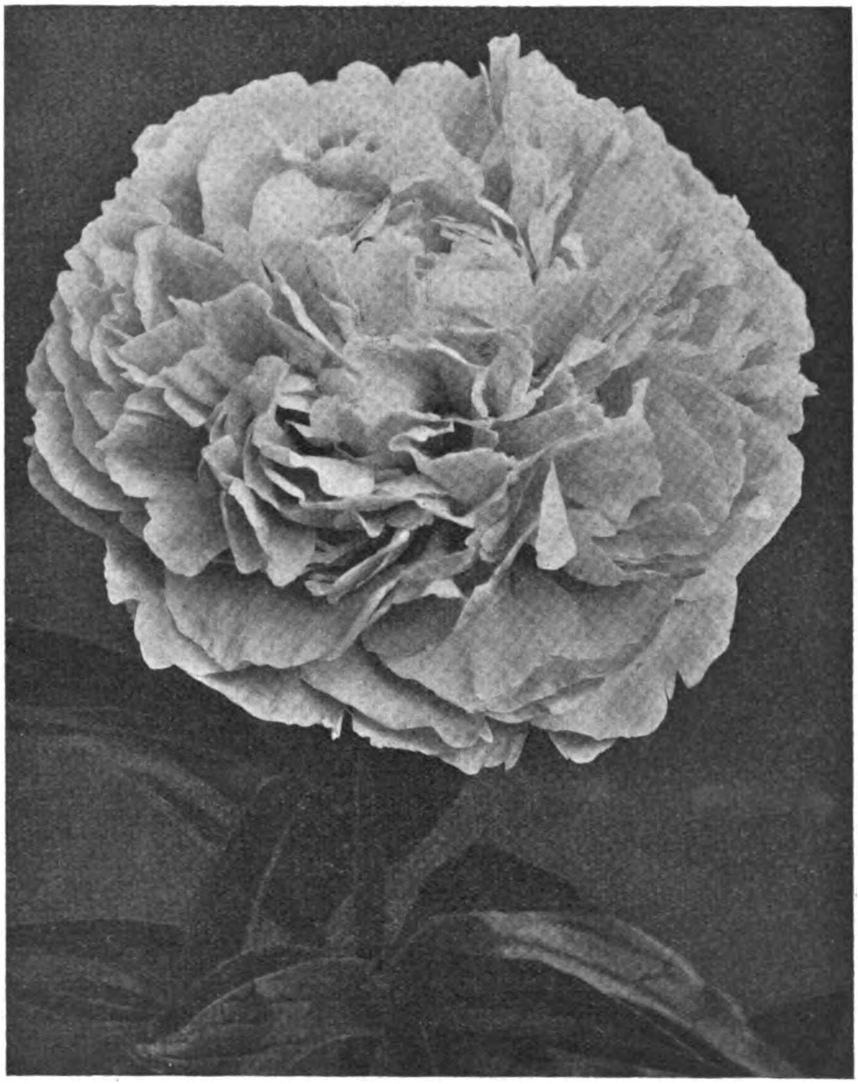


FIG. 1.—PAEONY MME. SARAH BERNHARDT

R.H.S. Award of Merit, June 24 (see vol. lxxv., p. 400).

HARDY FLOWER BORDER.

ANTHERICUMS.

SINCE the last week in May Anthericums have been flowering most profusely in the herbaceous border, and when seen in bold clumps with a ground plantation of such subjects as Funkia ovata undulata argentea, they make a most glorious effect.

The plants vary in height from one-and-a-half foot to three feet and are well adapted for various situations according to the height of the species; they may also be planted on the rockery, the tufts of narrow, grassy foliage and graceful spikes of snow-white flowers lending a most desirable charm to their surroundings.

The most suitable soil for Anthericums is a deep, sandy, well-drained loam, and they grow well either in full sun or a partially shaded position. They may be planted any time during the autumn and are increased by division of the root, and also from seed.

Anthericum Liliastrum major (St. Bruno's Lily) bears its white flowers on stems about two feet tall, and they are freely produced. A. Liliastrum giganteum (the Giant St. Bruno's Lily) (syn. Paradisea), is a giant-flowered form, producing in late May and June stout spikes with many large snow-white flowers, which forcibly remind one of a miniature Madonna Lily (Lilium candidum).

This exceedingly attractive and showy plant grows three-and-a-half feet tall, and when established produces solitary flowers from the base of the stem.

A. algeriense is a robust-growing plant with rigid, grass-like foliage, and bears numerous spikes of pure white flowers on stems two-and-a-half feet tall.

A. Liliago major (St. Bernard's Lily) has large, snow-white, starry flowers on stout, branching stems two-and-a-half feet tall, and this also is an exceedingly attractive species for gardens.

A. Bovei, a distinct Algerian species, produces its white flowers late in the season. A. Hookeri (syn. Bulbinella Hookeri) is the only yellow-flowering species and a native of New Zealand. It grows one-and-a-half to two feet tall. The flowers are a rich golden-yellow, produced in pyramidal heads on stout spikes during June. It is an excellent plant for a partially shaded and boggy situation. All the Anthericums are invaluable for supplying cut flowers. *W. L.*

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Lycastes.—These showy Orchids are best re-potted each year. Where many plants are included in a collection the flowering period extends over a considerable period and re-potting should take place when the young growths are a few inches long and new roots are developing from the base. Lycastes are, for the most part, vigorous-rooting subjects; therefore they need ample pot room and a retentive compost, consisting of equal parts of good fibrous loam and turfy peat, broken into somewhat short portions. Remove all the dusty particles, and add sufficient crushed crocks to ensure porosity of the compost. Pot rather firmly and keep the crown of the plant a little below the rim of the pot. Grow the plants in a light, airy position in the cool Odontoglossum house. After the roots have grown freely in the new soil a good supply of water is essential throughout the plant's growing season, but when the plant is at rest the compost should be kept only just moist. These Orchids should never be syringed overhead. The distinct and rare L. Dyeriana differs from the usual type in regard to culture. It grows in a downward position, similar to Cattleya citrina, and should be grown in only a small quantity of rooting material. It grows best when suspended near to the roof-glass in a house having an intermediate temperature.

Vanda coerulea.—After a season of rest since passing out of flower, plants of Vanda coerulea have become active at the roots, and the work of re-potting should be attended to. Plants having healthy roots and which have retained their bottom foliage should have the old compost picked from between the roots and fresh material substituted. Others that have become bare of leaves at the bottom part should have portions of the stem cut away to below some of the aerial roots and be potted afresh. The plants should be placed as low down in the pot as possible, filling in between the roots with clean crocks to three-quarters the depth of the receptacle and filling up the latter to the rim with a mixture of Osmunda fibre, half-decayed Oak leaves and Sphagnum moss. Syringe frequently between the plants and on the undersides of the leaves during bright weather. The plants should occupy the lightest position in the Cattleya house and be subjected to but little shade.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

The Rock Garden.—Although the glory of the rock garden has departed for another year there is much in it that needs attention. The moist season has been particularly favourable to the growth of weeds and the rockery should be cleared of these and made tidy generally. Except where it is intended to save seeds of particular plants it is wise to remove all faded flowers and the coarser subjects will need severe trimming to keep them from encroaching on their less vigorous neighbours. The present is also a good time to prepare for future replenishments, for now that the summer bedding plants are disposed of it becomes easier to deal with the alpine section. Many of these charming plants, including Æthionemas, Campanulas, Dianthuses, Drabas, Saxifragas, Silenes, Violas and a host of others may be raised from seed sown now. Although the seeds germinate freely outside it is much better to sow them in pots or pans and give them the protection of a cold frame. Under these conditions it is much easier to maintain that uniform moist atmosphere so essential to the successful germination of seeds. Such plants as Aubrietia, Arabis, Helianthemum, Lithospermum and many others may be increased by means of cuttings from midsummer onwards, the successful striking of which depends largely on the choice of shoots. These should be taken from terminal growths of partially ripened wood and the practised operator will know by the cut when the right stage of ripening has been reached. Insert the cuttings firmly in small pots and cover them with a bell-glass in a shady position, or place them in a cold frame and keep the latter close.

General Remarks.—Climatic conditions during the past month have made it very difficult to cope with the work in the flower garden, as during some periods hoeing has been impossible, and the rapid growth of weeds has made it imperative to divert labour from other border work to prevent these from taking possession. Where hand-weeding has had to be resorted to, use the hoe as soon after as possible to break the whole surface of the soil. Remove faded flowers from all plants to prevent the formation of seed-pods and thus prolong their period of beauty. Peg down those plants requiring it until they have covered their allotted space. Continue the staking and tying of later flowering subjects, using strong, square stakes for the heavy-foliaged ones and thin out all weak or surperfluous growths.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Outside Fruit Borders.—Vines and other subjects growing in outside borders usually require frequent attention at this season of the year with regard to supplying water to their roots. With drying winds and bright sunshine rapid evaporation takes place, and the borders are apt to crack badly on the surface. To counteract this a mulching of short manure, or failing this a top dressing of partially-decayed leaf-mould will suffice. This, if kept in a moist condition, will attract many fibrous roots near the surface and will tend to keep the borders cool and moist. After waterings and heavy rains the surface of the border should be raised lightly by the use of a fork to prevent rapid evaporation. No hard and fast rule can be given when to apply water at the roots, the grower must be guided by the amount of rainfall and drying winds.

Plums.—Where the fruits have set thickly on Plum trees they should be thinned moderately and the trees afforded a stimulant in the form of diluted liquid manure or a concentrated fertiliser. Watch them closely for signs of aphis on the foliage and syringe the trees twice, at intervals, with Quassia extract, mixed with soft water for preference. These trees are very subject to attacks of silver leaf, and any branches affected with this disease should be cut clean out. Pinch the growths back to three or four buds to cause them to form fruit spurs; and leaders required for extension should be allowed to grow for a time. Plenty of healthy foliage without crowding will favour increased root action

Apricots.—Keep these trees well supplied with moisture, especially close to the wall, and disbud the growths as they need it. Where four or five shoots are springing from one base, as they do on these trees, take out the weakest, leaving one or two of the best, otherwise the trees will become congested with growth. Syringe them on warm afternoons and see that the foliage does not cover the fruit. Apricots in the open require all the sun available to ripen them.

Thinning Fruit.—With the advent of warm weather all fruit is swelling very fast, and attention should be given to thinning the weakest, especially Apples and Pears, leaving only those in the best positions to ripen. It is much better to have a moderate crop of first-class fruits than a superabundance of small, mis-shapen specimens.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Melons in Frames.—In the early weeks of June the weather was not favourable for Melons growing in frames, and if lining the frames with fresh fermenting materials had been neglected, the plants will probably have been checked in growth through the cold. Plants that are growing freely will need attention with regard to training the laterals which should never be allowed to become crowded. As the flowering stage approaches, all laterals should be lifted up to the light, and stopped at one or two leaves beyond the fruit. It is essential to pollinate the flowers when a sufficient number of blooms is available. Melons delight in plenty of sunshine and warmth, therefore close the frames early and regulate the atmospheric moisture in accordance with the weather.

Cucumbers in Frames.—These plants also have not made such progress as could have been wished owing to lack of sunshine in their early stages of growth. With more sunshine and by closing the frames early in the afternoons they will soon make active growth. Cucumbers are very easily managed in frames provided regular attention is paid to pinching the points of the shoots at the second leaf as soon as the fruits are visible, but one must be guided in this respect by the amount of space available. When sufficient fruits have set the roots should be watered liberally with liquid manure. Guard against overcropping if the plants are required to fruit over a long season. Syringe the foliage freely when the outside conditions are favourable, but discontinue when the weather is cold and sunless.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Clivia (Imantophyllum).—Every encouragement should be given Clivias throughout their growing season towards building up strong growth to ensure good flower spikes for the next season. All except those plants which may have been recently potted should be fed liberally with well - diluted liquid manure and soot water. These plants require copious supplies of water at this time of the year, and should be well syringed with clean soft water twice daily and the atmosphere of the house kept moist. Later, when growth has been completed, less water at the roots will be needed, and a drier atmosphere maintained, in order that the growth may ripen.

Carnations.—Efforts should be made to complete the final potting of the winter-flowering perpetual varieties. Except that an increased proportion of loam should be used than was advised for the previous potting, much the same compost as was then recommended may be used for the final shift. Pots of seven-inches diameter should be used. The soil should be made firmer at this potting than at the last. Guard against covering the old balls too deeply (the covering of new soil should not exceed a depth of half-an-inch), for deep potting is often a cause of stem-rot. From now onwards through the summer the pots may be stood out-of-doors on an ash bed. For the first few weeks, however, it will be well to place a skeleton frame over the plants on which frame-lights may be placed in wet weather. An excess of moisture at the roots just after potting would be very harmful to the plants.

THE KITCHEN GARDEN.

By **Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.**

Late Celery.—So soon as the plants are ready, no time should be lost in placing them in the trenches. Before lifting the seedlings give the roots a good soaking with water and allow time for the excess of moisture to drain away. By doing this the plants will be easier to handle. After planting them, see that they have plenty of water at the roots in dry weather; and should the maggot put in an appearance dust the foliage with soot at intervals. Pull off small leaves and side growths from the earlier Celery and place soil about the plants. Celery should never be allowed to receive a check from drought.

Celeriac.—Where seeds of this vegetable were sown as previously advised and the seedlings pricked out, the latter will now be ready to plant in the open ground. Set the plants in rows made 20 inches apart and 1 foot between the plants in the rows. Celeriac needs an abundance of water during the growing season, and overhead sprayings in the evenings will be beneficial.

Cucumbers. — Regulate the growths on Cucumbers, removing all superfluous shoots. Cut off the fruits immediately they attain a suitable size for use, and if not required immediately stand the stalk end in water. Red spider is a troublesome pest to this crop, but may be kept in check by syringing with water to which a little soot has been added. Damp the beds and promote a moist atmosphere. Frame Cucumbers should receive attention in thinning and regulating the growths. Top dress the roots with good turfy loam as the bed becomes exhausted.

Turnips.—A further sowing of white, yellow, and other coloured varieties of Turnips should be made now. Thin the plants as soon as they are fit to handle, and after they are thinned stir the soil between the lines with the hoe.

Runner Beans.—Make further sowings of Runner Beans for successional cropping and place the stakes in position as soon as the Beans are through the ground. Dust the rows with soot to ward off slugs.

Asparagus. — The cutting of Asparagus should cease from this date to enable the plants to build up strong crowns for next year's production. Strong-growing crowns will need support against winds and heavy rains. The bed should receive a dressing of a quick-acting fertiliser during the summer and be kept free from weeds by hand-weeding. Seedling beds should receive attention; give them a dressing of salt and apply a mulch of short manure between the rows to prevent the soil from getting excessively dry.

Peas.—For late crops of Peas, seeds should be sown now. Make a trench and place plenty of decayed manure in the bottom and on this a good layer of soil. Choose an open site for this sowing as the plants are less susceptible to attacks of mildew when they are fully exposed to the sunlight and air and sown on the open ground. They should not, however, be grown in a depression of the ground where they would receive excessive moisture at the roots.

Seeds. Further sowings of Lettuce, Radish, and Endive should be made for autumn use. Plants in the seed beds may be set out in showery weather to keep up the supply.

TREES AND SHRUBS.

CYTISUS SUPRANUBIUS.

I was very glad to see the note (p. 377) on this fragrant Broom, and to observe that it had received an Award of Merit from the Royal Horticultural Society. In regard to hardiness I would state that my plant has grown in its present position in a garden in East Lothian for ten years, and it has never suffered any damage from frost. It flowers every season, but this year the blooms were about a month later than usual. Mitraria coccinea was cut to the ground this spring, and Tricuspidaria lanceolata was severely damaged, but Lapageria rosea, Philesia buxifolia, Notospartium Carmicheliae and Cytisus supranubius were not hurt at all. The last is a fragrant Broom worthy of wider cultivation. *Geo. M. Taylor, Edinburgh.*

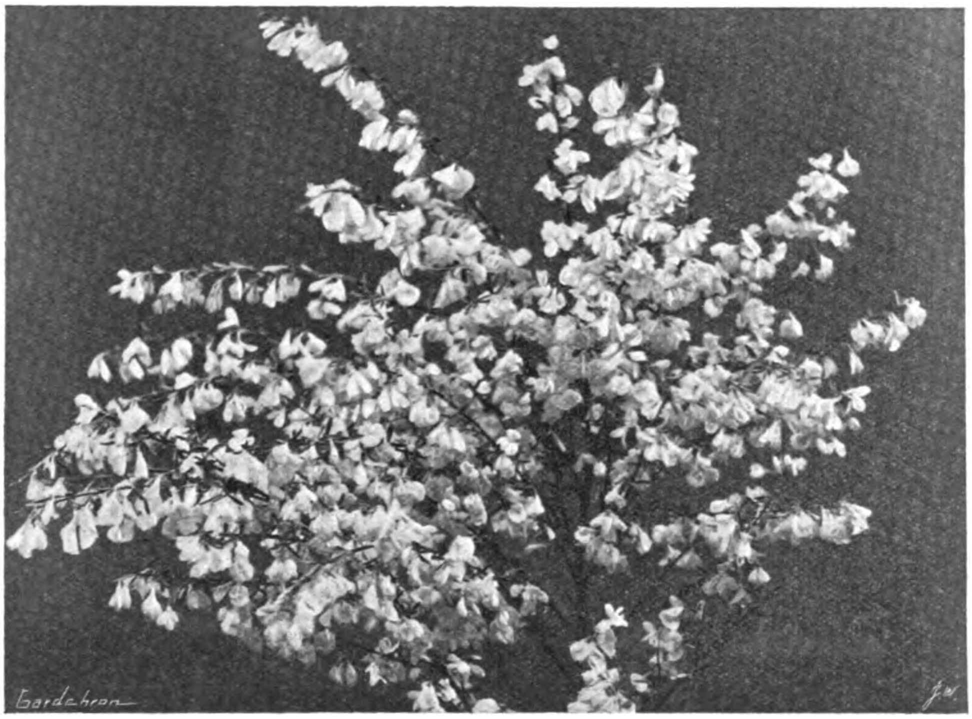


FIG. 2.—GENISTA CINEREA.
R.H.S. Award of Merit, June 24 (see vol. lxxv., p. 390).

RUBUS DELICIOSUS.

This uncommon Bramble when out of flower resembles in appearance a shrubby Spiraea. In a fertile soil, and a sheltered position, it forms a spreading bush from three feet to five feet high.

The flowers are borne singly, on short stems, on the twiggy, spineless growths of the previous season. The white flowers are two inches across, with a cluster of yellow stamens; each flower stem is usually furnished with three orbicular, wrinkled leaves. When planted in the mass and wreathed with blossom the effect is very fine indeed. *F.*

STAPHYLEA COLCHICA.

The untoward spring which has now lapsed into wonderful summer was a testing time for early-flowering plants. Of the later of the series none has withstood better the vagaries and inclemencies of the weather than Staphylea colchica. Its waxen white flowers in clusters of pendulous racemes have a rare grace, and the arching branches which bear them give just enough protection from wind and driving rain to save the blossoms from damage.

The flowers of Staphylea colchica last long on the shrub and if grown as a standard—on a single stem—S. colchica is worthy of a foremost place among flowering shrubs. Mr. Gerald Loder, whose connoisseurship of plants is unrivalled, tells me that Staphylea holocarpa from China is better. If so, both should be grown. *K.*

RHODODENDRON DISCOLOR.

Near the King William's Temple at Kew many magnificent specimens of this late-flowering Rhododendron have been a source of pleasure to visitors during the past week.

This species was first flowered in this country in 1911 and the specimens at Kew have attained a height of about eight feet or more. The funnel-shaped flowers show a little colour variation, some being a very pronounced shade of pink in the bud stage. When fully developed they are white with a creamy-yellow tint in the throat. They are of immense size and carried in not too crowded trusses of as many as nine flowers. The leaves are long and comparatively narrow, of dark green colour on the upper surface and light greyish-green underneath. R. discolor was introduced by Wilson who collected its seeds in Eastern Szechuan. *R.*

GENISTA CINEREA.

Although Genista cinerea (see Fig. 2) has for a number of years been regarded as one of the most magnificent of its class it is rarely to be found listed in catalogues. This early summer at Kew—where Leguminous trees and shrubs have been magnificent—G. cinerea has flowered profusely and the large specimens have been clothed in a mass of golden-yellow flowers. It is a native of the western Mediterranean regions and is especially useful for the ornamentation of dry, sandy banks.

The specimens exhibited at the Royal Horticultural Society's meeting on June 24 were from the Royal Botanic Gardens, Kew, and although an old plant in cultivation, no subject was more conspicuous or received greater praise from visitors, amongst the novelties and new plants. *R.*

HORTICULTURE AT THE BRITISH EMPIRE EXHIBITION.

THE FRUIT GARDENS.

The several gardens laid out by nurserymen in the Horticultural Section include a few fruit gardens by well-known nursery firms. It is, obviously, not so easy to make striking exhibits of this character in a single season, whereas with flower gardens a brilliant effect may be obtained so soon as they are completed and their beauty maintained throughout the season. When the blossoming of fruit trees is over their chief glory has departed and newly planted trees cannot be expected to set fruits freely. But such exhibits may be made to have an educational value and serve to show the different types of trees and bushes best suited for various purposes. Messrs. Seabrook and Son have planted two triangular-shaped pieces of ground, one at either end of the fruit quarters, as modern commercial fruit plantations. They are both laid out similarly and have, as a border, a row of dwarf Polyantha Roses. The fruit plantation commences with a row of oblique-trained cordon Pears and Apples, supported to strands of wires, and at a suitable distance is a row of bush Apples, next to that a row of half-standard Apples, and in the centre a row of standard Apples. These "top" fruits are interplanted with Black Currants, Gooseberries and Red Currants. All the trees are excellent examples of their kinds and their pruning and training, having been done by experienced growers, visitors may gain many hints from these model plantations.

Messrs. S. Spooner and Sons have a more ornamental garden in which is a central flag-stone path, leading from their Rose garden. The path is made to surround small circular beds at intervals and in the fruit garden these are planted with standard Gooseberries. Just by the path are rows of Strawberries and next to these are double cordon and standard Gooseberries. Examples of cordon, bush, half-standard and standard Apples and Pears are included in the larger area on the one side of the path, and on the other are fine specimens of bush Plums and Cherries, the boundary being a hedge of Loganberries, trained on wires.

Messrs. Laxton Bros., Bedford, have made a very attractive fruit garden, divided in the centre by a T-shaped flag-stone path, each half of the garden being a counterpart of the other. The fruit trees are planted in beds or borders cut out of and surrounding a lawn, in the centre of which is, in each half, a six-pointed, star-shaped bed planted with dwarf Polyantha Roses. The fruit trees are magnificent examples of the different styles of training. In one of the half-circular beds in the foreground are superb trees of espalier Peaches, behind triple cordon Currants and Gooseberries, a row of Strawberries completing the scheme. The nursery method of training espalier fruit trees on Bamboo canes may be seen. Also the simple method of staking standard trees by means of three stakes arranged as a tripod. The stone fruit trees trained in fan shape, Apples and Pears as espaliers, some with obliquely trained branches, and single, double and triple cordons, are all remarkably good.

Messrs. T. Rivers and Son have planted a square piece of ground as fruit borders and fruit garden. The borders are divided from the larger area by a grass path, and they contain tall trees at the back with some of the ornamental Crabs at intervals. Half-standard Apples and Pears, bush Plums, fine gridiron-trained Apples interspersed with small pyramid Pear trees and triple cordon Currants, all of first-rate quality, are the main features of these borders. The large, square bed contains all types of fruit trees. The outer row is of horizontal cordon Pears alternated with triple cordon Currants and Gooseberries. At each corner is a tall-stemmed fan-trained Plum set at an angle, and there is a row of fine espalier trees, running around the four sides. Further in are small bush and pyramid Apples and Pears, and next to these half-standards interspersed with upright, single cordons, with, in the centre, standard espaliers. The planting is rather close, but the system might be adopted in a small garden if hard pruning was followed.

BULB GARDEN.

YELLOW-FLOWERING TULIPS.

Of the hundreds of varieties of Tulips now offered to the public at autumn time there are perhaps none so popular as the yellow-flowered sorts and of these there are a number ranging in tone of colour from the palest Primrose to the deepest golden. Used either for forcing or for garden decoration yellow is a colour which is always in favour and happily by a judicial choice of varieties a sufficiency of Tulips of this colour may be obtained without a break, from the earliest days of January until the middle of May.

For the first blooms we have to depend upon the beautiful single variety Mon. Tresor, which forces readily and early and has a good colour. The flowers are of good size and although it is undoubtedly one of the best for growing in pans or pots it is not to be despised for massing in beds or borders in the garden. Another early-flowering yellow single Tulip is King of the Yellows, and it is admirably adapted for early forcing. The blooms are egg-shaped, of good texture and borne on tall stems. It cannot be recommended for bedding, as out-of-doors the stem grows a little too weak to carry the flower in an upright position. Rising Sun is a large and unusually substantial flower inclined to be a trifle coarse. The colour is a clear golden-yellow and this variety may be used alike for forcing or for bedding. It is a sport from the red and yellow variety Duchesse de Parma and it is becoming very popular.

One of the earliest yellow varieties and certainly one which should be in every garden is Prince de Ligny. The colour of the flower is of the richest shade of golden-yellow; the flowers are carried on stiff, erect stems and the pointed, slightly recurved perianth segments lend beauty of outline to the bloom. It will force, but it is advisable not to force it hard, otherwise the blooms are inclined to come rather small, for when naturally grown it is only a medium-sized flower. Its main claim lies in its use for garden decoration. Ophir d'Or is also a good bedding variety of deep yellow colour, while Yellow Prince is a dual-purpose variety, suitable for forcing or garden decoration. It cannot, however, be regarded as a self-yellow as often it becomes streaked with red after the flowers have opened a day or two. This streakiness appears to be intensified when the variety is grown for a succession of years in hot, dry, soil. Nevertheless, it is grand under glass and is used extensively by the market growers who depend on it for early and late forcing. There is a form of this variety with variegated foliage.

Golden Queen is perhaps more satisfactory for forcing than for bedding; it is a large flower of pure yellow colour, but the stem is hardly strong enough out of doors, although it is a magnificent forcer; Yellow Queen, on the other hand, is more suitable for bedding than for forcing—in fact it is claimed by some to be the best yellow Tulip for massing out-of-doors. It is said to be a sport from Pottebakker and is also sold as Moonbeam. Of Primrose-yellow shade, there is Primrose Queen synonymous with Hermann Schlegel. The colour is Primrose-yellow on the outside of the segments and clear yellow inside. It will force, but its best use is for bedding.

Double yellow varieties are represented by three or four good sorts, of which Mr. Van der Hoef, a sport from Murillo, is one of the best; it is also known as Rêve d'Or and Murillo Yellow. Golden King is one of the newer varieties of good, rich, yellow colour and excellent for early forcing, while Golden Beauty and Van Tubergen (a beautiful sport from Couronne d'Or) are two others worthy of recommendation. Couronne d'Or, although yellow pigmentation predominates, is flushed with orange and is a very popular market flower. Safrano (also known as Tea Rose, Brimstone and Brimstone Beauty) is a sweetly perfumed sport from Murillo, of Apricot-yellow colour and splendid for forcing and bedding.

Coming to the Cottage or May-flowering section—for it must be remembered there are no yellow Darwins—there is an abundance of varieties and for purposes of classification these may be divided into (1) those with long, pointed segments and (2) those with cupped shaped blooms with rounded segments.

To the first class belongs the "Gesneriana" type including Gesneriana lutea, and the paler coloured form Gesneriana lutea pallida, also listed as Mrs Keighley. The first-named is a very fine flower and no matter the age of the bloom it never looks faded; it is undoubtedly one of the best of its type and it will withstand rough weather. Gesneriana ixioides is a very beautiful bloom and possesses a black base; Ellen Willmott—not to be confused with Miss Willmott, a dark rose double variety—is a beautiful late sort. The colour is soft Primrose-yellow and the long flower has slightly reflexed pointed petals. The colour deepens to bright yellow as the flower ages. Of somewhat similar form is Mrs. Moon (fulgens lutea maxima) of rich golden yellow and an excellent late variety.

Parisian Yellow is also a variety worthy of a place in the garden, but perhaps the best of all is W. T. Ware, of deep yellow colour—a magnificent flower of good form and texture and very late. Other pointed petalled varieties are retroflexa—which, as the name implies, has its segments curving outwards—and retroflexa superba, an improvement on the type; both are excellent for cutting. Golden Crown, yellow, edged with scarlet; Golden Spire, orange-yellow; Leghorn Bonnet, chrome-yellow; and Avis Kennicott, a long pale yellow flower with velvety black base are other dependable varieties. Moonlight is a rather globular flower of large size and of soft Primrose-yellow colour.

Inglescombe Yellow and Bouton d'Or are representatives of the cup-shaped section. The former is a wonderful flower of a clear light yellow shade. It flowers later than most of the Darwin class and grows about two feet high. Bouton d'Or is much deeper in colour, the flowers being of medium size. Unfortunately it is inclined to come rather small when cultivated on light soil, and seems to delight in a stiff, mellow loam.

The above list is by no means complete, but from it I would regard the undergoing as the pick :—

For early forcing: Mon. Tresor and Yellow Prince.

For late forcing: Prince de Ligny and Inglescombe Yellow.

For early garden bedding: Prince de Ligny and Yellow Queen.

For late garden bedding: Inglescombe Yellow, Ellen Willmott, Gesneriana lutea and W. T. Ware.

As the true yellow varieties contain no anthocyanin pigment they do not break and may be depended upon to come true in colour—unlike many of the highly coloured varieties (especially the reds and scarlets), which become travesties of their former selfs when grown in dry, hot soils. *R. K.*

Largest Manufacturers of Flower Pots in the World.

By Appointment

SANKEY'S
FAMOUS
GARDEN
POTS

THE BEST AND CHEAPEST.

SPECIAL POTS for Roses, Vines, Clematis, Orchids, and Chrysanthemums.

Fancy Fern Pans and Bulb Bowls, from 3d. each.

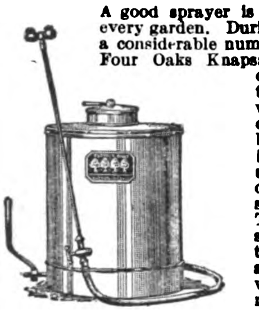
No Waiting! All Orders executed the same day as received.

State quantity of each size required and have Carriage Paid quotation, or write for Illustrated Price List.

RICHARD SANKEY & SON, LTD.
Royal Potteries,
BULWELL, NOTTINGHAM.

NEW
Knapsack Sprayers
Less than Half Price

An Exceptional Opportunity



A good sprayer is absolutely essential in every garden. During the war we supplied a considerable number of our well-known Four Oaks Knapsack Sprayers—Rubber diaphragm type — to the Government, and we have just repurchased a small quantity back again **which have never beer used.** They are made of copper, but painted service grey colour. They possess various special additions to the ordinary machines, and the price to-day would be £5 each machine.

We guarantee them to be in perfect working order as new. We will send one machine carefully packed and carriage paid for 50s. Cash with order, or two machines for 90s., but cash must accompany all orders.

Please mention this paper.

The Four Oaks Spraying Machine Co.,
Four Oaks Works, Sutton Coldfield, BIRMINGHAM
Telegrams: "Sprayers, Four Oakes."

CALADIUMS

We make a speciality of these and have a large and select stock of all the newest and best varieties to offer. Order now. Catalogues free.

L. R. RUSSELL, LTD.,
Richmond Nurseries, Richmond, Surrey

GARDEN NETS.

Small Mesh, 25 x 2, 4/6; 25 x 4, 9/-; 50 x 4, 25 x 8 yds., 18/-

New ¾ in. square Mesh Nets cover full area when stretched, roped around, 4½d. sq. yd., any length or width.

New Tennis Boundary Netting roped around, 6 ft. high, 1/1; 7 ft., 1/3; 8 ft., 1/5½; 9 ft., 1/8. Satisfaction Guaranteed.

Despatched carriage paid passenger train on receipt order.

W. OLIVER ALLEN & SONS, Net Makers,
PORTHLEVEN, CORNWALL.

None Genuine without our Gold Medal Seal.

PLANT

REAMSBOTTOM & CO'S GAYGARDEN GOLD MEDAL ST. BRIGID ANEMONES

NOW.

12, 3/- 25, 5/6
50, 9/6 100, 12/-

A Customer, Stallcombe, Woodbury, Exeter, January 20th, writes:—"You will be interested to hear how well your St. Brigid Anemones have done. Those I planted May 31st started to flower profusely the end of August. Since then, in spite of frost and snow, I have never been without flowers. They are a mass of buds now, and the foliage has never died down."

Free Coloured Illustrated Catalogue with full information Post Free.

REAMSBOTTOM & CO., LANE NURSERIES, WEST DRAYTON, MIDDLESEX.

NICOTINE NICOTINE NICOTINE

No compound, poisonous or non-poisonous, is as effective or as safe as English-made Nicotine for destroying all sucking insects infesting vegetation. It cannot be bought in a more convenient form for spraying or syringing than as Campbell's Nico Soap.

CAMPBELL'S NICO SOAP (Nicotine-Soap). The best potash soft soap plus 7½% Nicotine. A teaspoonful will make one gallon of strong spray fluid. Prices: ½ lb. 2/-; 1 lb. 3/6; 10 lbs. 30/-.

CAMPBELL'S ENGLISH NICOTINE 95-98% This is offered to large users or others preferring to make up their own fumigating and spraying compounds. Prices on application. Directions for using included.

CAMPBELL'S NICOTINE VAPORISING COMPOUND. Nicotine content 50%. Prices: 1 oz. 1/6; 4 oz. 3/9; 8 oz. 7/6; ½ pint 9/-; 1 pint 17/6; ½ gallon 61/-.

CAMPBELL'S NICOTINE FUMIGATING ROLLS. Very simple for fumigating greenhouses. In four sizes, for 500, 1,000, 2,000 and 3,000 cubic feet. Prices: 7d., 10d., 1/6, and 2/- each.

CAMPBELL'S PATENT SULPHUR VAPORISER. The best method of exterminating mildew from plants in greenhouses. In two sizes, for 5,000 and 10,000 cubic feet. Prices: 18/- and 20/- each. Apparatus lasts for years.

Obtainable from Seedsmen, or in case of difficulty, direct from the Manufacturer.

J. D. CAMPBELL, Nicotine Manufacturer
7, Lund Street, Cornbrook, Manchester.

Food for Thought and for Plants

In tins
1 lb. - 9d.
2 lb. - 1/3
7 lb. - 3/-

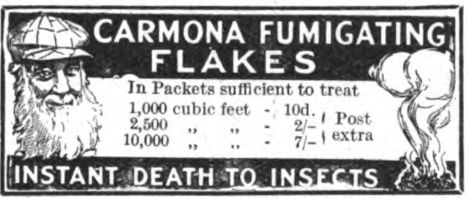
Carmona Fertilizer

In tins
1 lb - 9d.
2 lb. - 1/3
7 lb. - 3/-

The Garden Beautifier

Produces Superior Lasting Blooms of much richer hue and fragrance than any other so termed Manure.

CARMONA



CARMONA FUMIGATING FLAKES

In Packets sufficient to treat
1,000 cubic feet - 10d. } Post extra
2,500 " " - 2/-
10,000 " " - 7/-

INSTANT DEATH TO INSECTS

CARMONA

If unable to obtain from your Seedsman send your order direct to the Makers.

Sole Manufacturers:—
Robinson Brothers Ltd.
West Bromwich.

HARDY PLANTS WORTH GROWING

SPECIALITE

FLOWERING·TREES·SHRUBS
CLIMBERS·AZALEAS
RHODODENDRONS·BAMBOOS
CAMELLIAS·MAGNOLIAS·IRIS
JAPANESE·MAPLES·CHERRIES·PRUNUS
AQUATICS·WATER LILIES

V.N.GAUNTLETT & Co. Ltd.
JAPANESE NURSERIES·CHIDDINGFOLD·SURREY

Abol Sweet Pea Manure

Like many other annuals, Sweet Peas are rapid growers and need an easily soluble manure. Apply Abol Sweet Pea Manure at 2 ozs. per sq. yd. when about 12 in. high, and every 2 or 3 weeks during flowering period.

7 lbs. 2/6, 14 lbs. 4/-, 28 lbs. 7/-, 56 lbs. 13/-, 112 lbs. 24/-. Trial tin 1/3 post free.

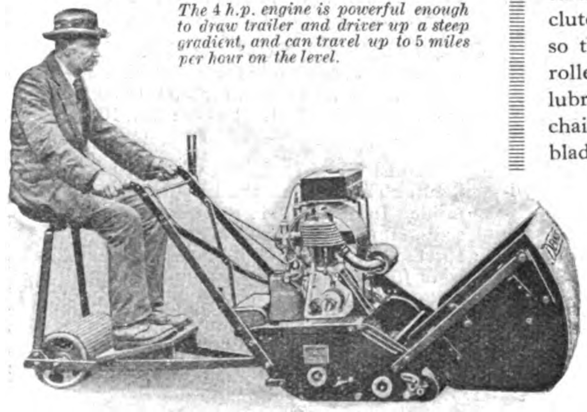
Write for descriptive folder.

Abol Limited
10, Beltring, Paddock Wood, Kent.

"The 'Dennis' is, in my opinion, the best mower available" *says Mr. Reginald Beale, F.L.S. (Messrs. James Carter & Co.) in his book "Lawns for Sports."*

HIGHLY efficient, it stands in a class by itself, and embodies all those characteristics that for the past 28 years have gone to make the name of "Dennis" a household word in the motor manufacturing industry.

The 4 h.p. engine is powerful enough to draw trailer and driver up a steep gradient, and can travel up to 5 miles per hour on the level.



The

DENNIS

MOTOR LAWN MOWER

has a 4 h.p. 4-stroke engine, which is easier to start, much more silent, and can be run at a slower speed than the usual 2-stroke engine, and is fitted with differential gear, which enables it to turn in its own ground; separate clutches for roller and cutting cylinders, so that the machine can be used as a roller only if desired; patent automatic lubrication, detachable covers to driving chains, mechanical adjustment for cutter blades, and many other unique features.

PRICE: Delivered to any railway station in Great Britain.

24 in. £75 30 in. £90

Trailer Seat Attachment £7 10s.

less 5% for cash within seven days.

Write to Dept. "G.C." for fully illustrated Catalogue.

DENNIS BROS. LTD., GUILDFORD.

Manufacturers of the "Dennis" Motor Lorries and patent Turbine Fire Engines.

NOTES FROM MAIDSTONE.

ROMNEYA COULTERI.

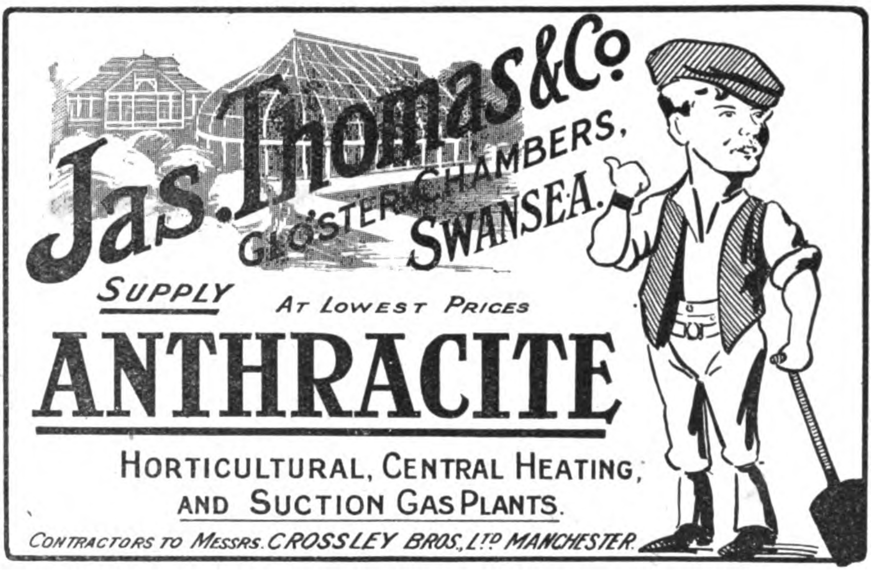
The Californian Tree Poppy is a well-known and handsome plant, growing 5–6 ft. high. The large white flowers, often 5 in. across are produced in abundance from June to October and the glaucous foliage is very handsome. They should be transplanted now and we can offer strong plants in 6-in. pots at 3/6 each.

HYDRANGEAS.

Large plants in bud with 6 to 12 heads suitable for tubs or vases, in 7-in. pots, 7/6 each, in 5-in. pots, one head, 2/6 each.

We also have many other desirable plants ready for present planting.

GEO. BUNYARD & CO., LTD.,
The Royal Nurseries,
MAIDSTONE.



Jas. Thomas & Co.
GLO'STER CHAMBERS,
SWANSEA.

SUPPLY AT LOWEST PRICES

ANTHRACITE

HORTICULTURAL, CENTRAL HEATING, AND SUCTION GAS PLANTS.

CONTRACTORS TO MESSRS. CROSSLEY BROS., LTD. MANCHESTER.

"ELECTRIC" WEED KILLER (Poison)

One application sufficient to keep paths clean for a year.

KEEPS UPKEEP DOWN.

Liquid 1-50 of water		Powder 1-25 of water	
5 galls. = 255 galls. ...	30/3	4 Tins. = 100 galls.	13/3
10 „ = 510 „ ...	55/-	8 „ = 200 „	24/9
20 „ = 1020 „ ...	107/3	12 „ = 300 „	37/-
40 „ = 2040 „ ...	209/-	20 „ = 500 „	57/3

Carr. Paid England and Wales. Directions for use on each vessel.

Wm. WOOD & SON, Ltd., The Royal Horticulturists **Taplow, Bucks.**

Ryders

SEEDS

£1,100 IN PRIZES

Ryders customers are reminded that their weekly competitions at which the above amount is awarded in Prizes are now in progress. The Competition closes on August 21st.

Great interest is being taken in these competitions, full particulars of which will be found in the catalogue.

Ryders seed catalogue this season is the most interesting ever produced, and, as long as the supply lasts, a copy will be sent post free on request.

Ryders
(RYDER & SON (1920) LTD.)
(Dept. 12)
St. Albans

NOTICES OF BOOKS.

Lawns for Sports.*

THE services rendered by the leading firms of seedsmen to golf and other games are greater than is often acknowledged. Golf courses in particular owe much to their skilled assistance; yet even those familiar with the ability of experts cannot but be surprised to learn from Mr. Reginald Beale's introduction to this interesting book that his firm was able to make playable one of the most recently constructed golf courses—that at Sandy Lodge—within five months of sowing. In April, 1909, the greens were sown, and on September 25 they were fit for use.

Those who contemplate the serious and expensive yet not unprofitable enterprise of laying out a golf course will find a wealth of information in these pages. In the first place they may learn what they are "in for" with respect to the finance of construction. The natural courses, like that at Malahide in Ireland, where turf grows short and crisp with a minimum of attention have long ago all been annexed and there are but left those places in which golf conditions can be produced only with the expenditure of money, time, and labour. Even the seaside course often needs for its construction much skill. Blowing sand may work havoc on sown grass seed and the constructor of the course has first of all to make his soil before sowing it. With each type of course the difficulties, though they vary, yet remain. Subsoil pan may have to be broken up; liming has often to be practiced, and yet on heavy ground liming, if resorted to, must be counteracted in some of its effects unless Clovers are to possess the fair-way.

Although it is, of course, a commonplace to gardeners that a knowledge of grass species and the habits thereof lies at the basis of success in golf-course making, the fact is generally learned by amateur golf secretaries after long and bitter experience. As Mr. R. Beale points out, rich natural turf, if it be composed of the finer grasses, may be made into admirable fairway by suitable treatment—cutting, harrowing, and judicious application of fertilizers; but if the land be rich and suitable for arable cultivation, for it to serve as a golf course it must be ploughed and sown and, needless to say, with the right mixture at the proper time and at the correct rate. On all these points Mr. Beale has much invaluable advice to give. Players have generally had experience of golf courses which were laid out without expert guidance, and one such remains in the writer's memory. It was in the Thames Valley on arable land, and temporary pasture had apparently been converted to the use of a golf course. In time Daisies had all but replaced the grass, and to find a white ball in a field of white Daisies is to tax unfairly the very limited patience of the golfer. After the third hole we gave up our balls and the game.

For each type of land and for green and fairway, Mr. Beale has prescriptions which if followed faithfully are bound to lead to success and result in that good close growth of turf on which the ball stands up invitingly, giving confidence—so often misplaced—to the novice and making a brassie and club worth carrying. Even should worms invade the ground they may be exorcised before their casts have converted grass into a slippery state so that the ball slithers anywhere but into the hole. We apprehend that in certain directions trouble may arise from the publication and perusal of this book. Disappointed players who have just failed in bogey competitions—and most players do just fail—discovering from Mr. Beale how perfection in golf-course construction may be effected, may blame unfairly their own club secretary for not achieving perfection and so enabling them to win every game they play! However, this is bound to happen anyhow, and we doubt whether any secretary will fail to find compensation in the increased knowledge, which his own perusal of Mr. Beale's book will bring him.

Mr. Beale's advice is by no means confined to golf courses; but applies also to lawns and croquet courts, bowling greens and cricket fields, and, indeed, to all those grounds used for open air games of any kind. Among the most useful of many different kinds of valuable information are the descriptions and illustrations of weeds which colonise grass land. Armed with this manual the green keeper and instructor of golf courses or playing fields should be able to achieve results which will—or should—make his name blessed to the members of the club he serves. Nor need he fear lest praise should spoil his character, for even when he has wrought perfection there will still be some who will find in the real or imaginary defects of green or pitch cogent reasons for their failure to excel. As a famous and witty golfer once observed: "I have never yet beaten a man who was in a perfect state of health," so there are golfers who, if their observations after a round mean anything, would have us believe that on a perfect course they are invincible. Mr. Beale by his excellent advice has given them a chance to demonstrate their prowess.

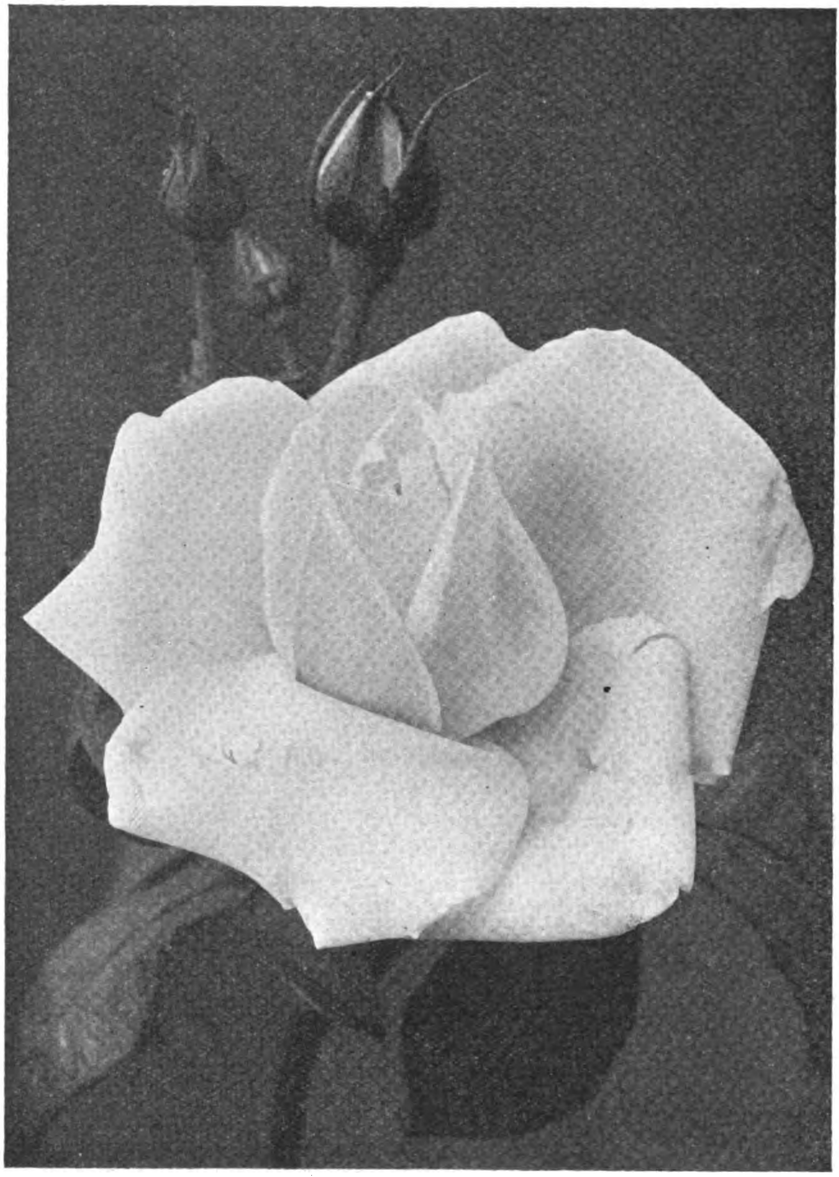


FIG. 3.—ROSE MARCIA STANHOPE.

Gold Medal, National Rose Society, June 27 (see p. 17).

Manures and Fertilisers.*

This book by Mr. W. Dyke is divided into three parts, the first one dealing with the science and practice of manuring; the second, the "Classes of Manures," and the third, "Formulae for Various Crops." The last named section contains a chapter of about forty pages on manurial formulae for treating greenhouse plants, annuals, both hardy and half-hardy; perennials, shrubs, fruit trees and vegetables; it is an abridged form of the late Dr. A. B. Griffiths' work (now out of print) on this subject. The author himself is also responsible for a chapter on "Fertilisers for plants and lawns," and the treatment of many crops has thereby been duplicated. By this means we fear the reader will be bewildered as to what manures to give his plants, as the advice offered by Mr. Dyke differs considerably from that given by the late Dr. Griffiths.

---

* *Lawns for Sports, their Construction and Upkeep.* By Reginald Beale, F.L.S. Simpkin, Marshall and Co., London, 1924. Price 12s. 6d. net.

* *Manures and Fertilisers.* By W. Dyke. Edited by T. W. Sanders. Messrs. W. H. and L. Collingridge London. 138 pp. Price 4s. net.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

THE CLASSIFICATION OF FLOWERING PLANTS.

THE history of the classification of plants affords not only an interesting but an instructive study at the present time. There is a growing feeling, it may be largely inarticulate as yet, that the systems now in use for the arrangement of Flowering Plants (Angiosperms) are either out of date or do not reflect the general trend of botanical thought respecting the evolution of the flower.

In pre-Linnean times two opposing attitudes towards the classification of plants were apparent. There were the philosophic botanists, notably Cesalpino, taking their cue from the ancient Greeks, who used *a priori* methods. They fixed on one or two characters and endeavoured to apply these in a forcible manner on a pre-arranged plan to all plants that came within their ken. On the other hand there were others, notably the early German herbalists, one may style them scientific by way of distinction, who compared plants as a whole one with another, and thus were led towards a feeling of what is now understood by the term, "natural affinity."

These two ways of classifying plants became known eventually as the artificial and natural systems respectively. The former may be said to have culminated in Linnaeus' famous sexual system founded on the number and arrangement of the stamens. The latter was hampered in its development by the strict adherence of botanists as a whole to the dogma of the constancy of species. Darwin undid the shackles and the true aim of taxonomy became apparent, viz., the arrangement of plants according to their evolutionary history. Had we before us all plant forms that have ever existed, the task would be comparatively simple; but owing to the countless extinctions that must have occurred and the unlikelihood of finding more than a tithe of these preserved in the rocks, it really becomes one of great difficulty. Though there is general agreement that classification must follow evolutionary or, to use a more technical word, phylogenetic lines, the danger ever lurks of giving way to the error of the philosophic botanists by employing some character in a too arbitrary and exclusive manner. Reasons will be given for thinking that Engler and his school have erred thus in the use they have made of the perianth.

Though many systems have been introduced for the Classification of Flowering Plants, only a comparatively few have held a dominating influence and been followed in the arrangement of floras and herbaria. Of the artificial ones that of Linnaeus was long in vogue and was only gradually, and all too slowly, ousted by the natural system developed by the French botanists, especially by the younger Jussieu and De Candolle. Bentham and Hooker adopted with modifications the latter's scheme in their great work, the *Genera Plantarum*, and their classification has been in general use in this country until fairly recent times, and is still being followed in certain quarters. We believe this conservatism to be justified. To Jussieu we owe the time-honoured division of the Dicotyledons into the three sub-classes founded on the nature of the corolla—a division one ventures to say of great helpfulness in the past and one which may not yet have quite outlived its usefulness, provided we recognise that both the Sympetalae (petals united) and Apetalae (petals absent) have arisen at more points than one from the Polypetalae (petals free).

While De Candolle's classification was being taken over and stereotyped by British systematists, a change of attitude towards the arrangement of Flowering Plants, and of Dicotyledons in particular, was making itself felt on the continent. Brongniart had pointed out that the apetalous families are probably reductions through the loss of the corolla from petalous forms. Instead of keeping strictly to this progressive idea, Eichler followed by Engler diverged on fresh and novel lines by inferring the primitiveness of the flower of few parts. The Ranalean families (Magnoliaceae, Ranunculaceae, etc.) no longer stand at the base of the Dicotyledons. The primitive position is now assigned to Casuarina and the catkin-bearing trees. The dominating personality of Engler coupled with the publication in association with Prantl, of that colossal and in many ways magnificent work, *Die natürlichen Pflanzenfamilien*, may have influenced the ready acceptance on the continent of this innovation in classification. In this country we were greatly indebted in early post-Darwinian times to Germany for initiating us into the methods of modern or laboratory botany as we may term it, and this may have rendered us too susceptible to anything novel from that quarter. Or it may be that Bentham and Hooker's system ceasing to satisfy on account of the artificial nature of their Monochlamydeae (Apetalae), there appeared to be no alternative but to turn to that of Engler. The remedy really lay in a remodelling of Bentham and Hooker's classification. It is pleasing to see that a commencement has now been made in this direction. Mr. J. Hutchinson is bringing out a series of papers in the *Kew Bulletin* entitled "Contributions towards a Phylogenetic Classification of Flowering Plants." The last of the series (*K.B.*, 1924, p. 114) is now to hand in which he sets forth a re-arrangement of the families comprising the Archichlamydeae (i.e., the older divisions of Polypetalae and Apetalae taken together). He is not the first in the field to challenge the Engler system; but I venture to think that with his detailed knowledge and *flair* for affinities, and with an unrivalled collection of plants at his command, he will achieve success where others have failed. A new authoritative classification of Flowering Plants is a pressing need. A foreword by the Director of Kew (*K.B.*, 1923, p. 65) informs us that these papers are intended eventually to form the basis of a separate work.

Before proceeding to review this series of papers, let us see wherein we feel that Engler's system in its main contention is unconvincing and artificial. It may look on paper plausible to commence with plants bearing flowers of few parts and pass on to those with many; to begin with ones with no perianth, proceed to those with sepals only, and then to those with both sepals and petals; to advance from unisexual to hermaphrodite flowers. But when nature is consulted, such a facile interpretation of the evolution of the flower does not carry conviction. The reverse interpretation would appear to be the rule. Engler in my estimation puts the cart before the horse. Reduction and simplification supply the key-notes. Flowers of few parts are usually arranged in dense clusters, to wit the catkins, and flowers of many members singly or few together. Surely the tendency is for the flower to decrease in parts as the inflorescence increases in complexity. From the Englerian standpoint there would appear to be no way of deriving the perianth except as a new outgrowth from the floral axis. *De novo* origins are to be avoided unless there is strong evidence for the same. A still greater difficulty in Engler's system is how to account for the origin of the hermaphrodite flower. His supposed most primitive flowers are unisexual. How have these given rise to bisexual ones? Here again there would seem to be no explanation but that of the sudden appearance of the missing organs! There is abundance of evidence of hermaphrodite flowers becoming unisexual, first functionally and then structurally; and in cases where this is not obvious (probably through the connecting links having disappeared) why should such flowers be declared primitively unisexual?

The supposition that the unisexual flower of the catkin-group is primitive in character, is in the writer's opinion feasible only in the view that these plants have had quite a different origin from those of the Ranalean families. There are grave difficulties in accepting this. Space forbids my entering into them here. I consider the evidence points strongly in favour of the whole of the flowering plants, both Dicotyledons and Monocotyledons, as having had a single origin or, to use biological terminology, as being monophyletic; and further, that of all known flowers those of Magnolia and allied genera retain the largest number of primitive features. From such a flower, somewhat generalised, all other types can be derived by reduction. Further, probably flowers were originally borne in solitary fashion, each terminal to a leafy shoot, and that the clustering of them together is secondary, Also, contrary to the Engler school, I hold that flowers (Angiospermous flowers as opposed to Gymnospermous cones) were primitively insect-pollinated, and that all Angiospermous plants which now depend upon the wind for their pollination had entomophilous ancestors. Indeed, I might go so far as to suggest that the flower actually owed it origin to insect agency. In addition, the Monocotyledons are held to have been derived from early Dicotyledons. There may be some true affinity between the Ranales, the Nympheaceae in particular, and the Monocotyledons.

The above views have been expressed as the Ranalian theory as applied to the evolution of the Flowering Plants within the group. It is a coherent theory which, moreover, fits in with certain facts now known regarding a group of fossil Cycad-like plants, the Bennettitales. These provide the only hint we have had so far of the possible derivation of the Flowering Plants themselves, and suggest that in the Angiospermous line of descent the flower took its origin from a special kind of cone fitted for entomophily, hermaphrodite in character with the female sporophylls (carpels) borne on the axis invariably above the male sporophylls (stamens). Whereas, for example, in the true Cycadean and Coniferous lines of descent the cone may have been differentiated on unisexual lines from the beginning for wind-pollination. This idea also permits of the insertion in a comprehensive phylogenetic scheme of those three puzzling genera, Ephedra, Welwitschia and Gnetum, known as the Gnetales, explaining at the same time both their Gymnospermous and Angiospermous affinities.

Thus a theory is afforded upon which a classification of the Flowering Plants can be based and by which the further study of the flower may be fostered. The Englerian view now ceases to furnish any further line of enquiry, since the hope of deriving the Angiosperms from the Gnetales through the catkin families (Amentiferae) has proved vain. A return to the Ranales (in the wide sense) as a starting-point for the phylogenetic classification of the flowering plants is consequently eminently desirable, and Hutchinson is now making a definite move in this direction. De Candolle was the first to commence a sequence of the Dicotyledonous families with the Ranunculaceae and Bentham and Hooker followed suit. It is interesting to know that they did not see any especial phylogenetic significance in this (*Life and Letters of Sir J. D. Hooker*, 1918, Vol. II., p. 22); but it would seem that intuitively they were on the right track. *John Parkin.*

(*To be concluded*).

TRANSATLANTIC VISITORS TO WEMBLEY AND ENGLISH GARDENS.

The attractions of Wembley have brought a great many visitors to the old country this year from the overseas dominions and many of them have come with the intention of seeing other things besides the great exhibition. They have come, in fact, to see something of English life, its houses, gardens, and rural scenery, and I do not think they will go back disappointed. It has been my privilege to conduct a party of these visitors through some of the highways and byeways of the provinces and never did any guide have a more appreciative following. They were mostly educationists, professors and the like, attached to agricultural colleges in the United States and Canada, and while some of them had never been to England before, they are of English stock, the progeny of the pioneers who helped to found the Dominions they represent, and they speak with an affection which has a ring of reality of England as home. The party had been to Wembley, also to the great flower show at Chelsea and admitted that it was very fine and impressive, but when they saw an old-fashioned thatched cottage with Roses clustering on the wall, and a garden of old-fashioned flowers in front, they were almost childish in their expressions of delight. It seemed, after all, as if this was what they had come to see, the home life of England that they had heard their fathers and grandfathers talk about so much, and they admitted one and all that there was nothing like it in their countries. The verdure of the grass, the stateliness of the timber, the smell of the wild flowers, the windings of the hedgerows, the song of the wild birds, the old-world air of villages and the peaceful seclusion of mansions seemed to stir the English blood in American and Canadian veins in a manner that is not easily described.

Food for thought was provided for these visitors when they looked down the Avon gorge at Bristol and saw the river now just as it was when John Cabot and his son Sebastian sailed down it on the tide in a cockleshell of a boat that was taking them Westward, which was all they knew, but, as events proved, to discover the mainland of America, and incidentally mark the beginning of the civilisation of that great continent, the development of which is so graphically demonstrated in the exhibition at Wembley. It is true these Americans and Canadians displayed pride in their own countries as they have good reason to, but they realised that the early foundations were laid by men of the West country, the Cabots, Drake, Raleigh, and the Merchant Venturers of old Bristol town.

No less excited were the visitors when they found themselves in the Shakespeare country round Stratford-on-Avon, saw ingle nooks in which the great poet might have sat, old gardens in which he might have mused, filled with the flowers he mentioned in his writings. "And is this really the very place?" asked one of the party taking a snapshot of the old house in which the Bard was born. "I would not have missed this for all the Wembleys in the world"

I think the Plum of the cake, however, from their point of view, was a drive over the Cotswold Hills and a visit to a Cotswold Manor House with a real old English garden attached to it. Incidentally on the way we passed through the village of Painswick, sometimes called the pride of the Cotswolds, with its ninety and nine clipped Yews in the churchyard and the stocks in which the transgressors used to sit in the days gone by. But the Manor house—I need not name it—and its garden and outlook, imprinted pictures on those American and Canadian memories that will never fade. I do not know which impressed them most, the grey stone house with its pointed gables, stone tiles and mullioned windows, or the garden with paved walks, clipped Yews, terrace walls in the same native stone, beds of Lavender and Rosemary, and borders filled with herbaceous flowers, for the owner quite rightly will have neither Pelargonium nor Lobelia within the limits of his domain. It was no easy task to get the visitors away and even then they lingered in the village just outside, with a trout stream rippling by and never a brick house to be seen—only old stone cottages of the quaintest of architecture and a venerable church built by some wealthy woolstapler when Cotswold sheep wandered over the hills and the wool from their backs was woven into West of England cloths in the little mills driven by water power which look mere pigmies by the side of the multi-windowed factories of the present day.

It is the enthusiasm of visitors like these which makes one realise what they miss and we possess in the history, traditions, folklore of the country side, and not least the sentiment of the old-world gardens which at its best America can do nothing more than imitate. As the train bore the party away back to London and Wembley again, and they waved their adieus from the carriage window, I could not help thinking that interchanging visits of this kind will do more than politicians can ever accomplish to weld together the English-speaking people into one great family. *G. H. H.*

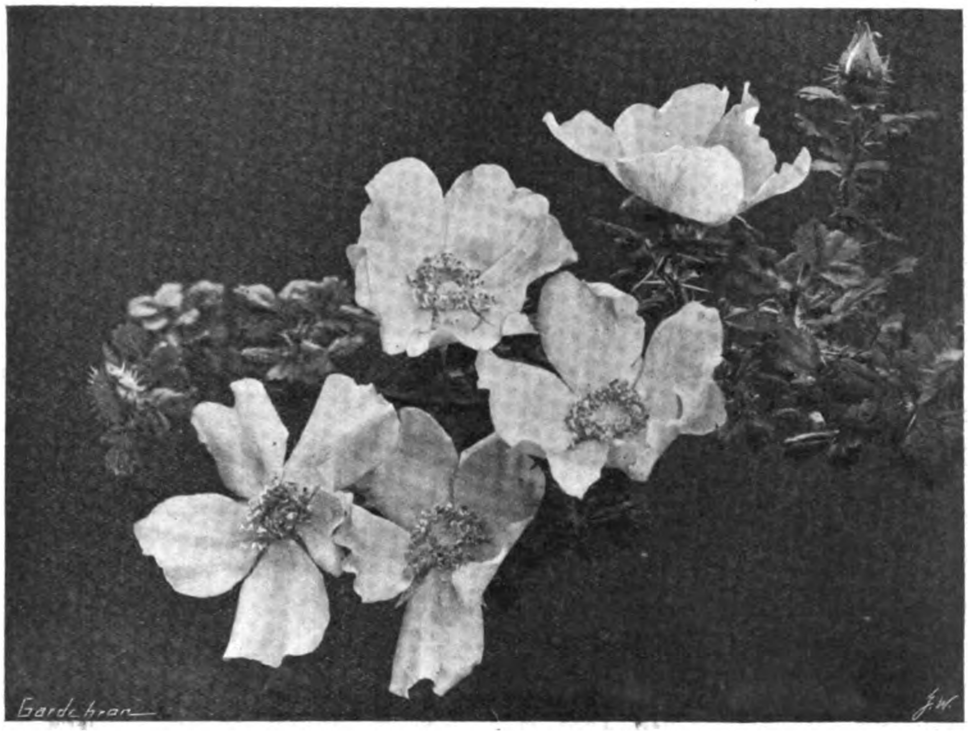


FIG. 4.—ROSA MIRIFICA

R.H.S. Award of Merit. June 24 (see vol. LXXV. p. 399).

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM AGLAON.

The name l'Aiglon being frequently used instead of the recognised name Aglaon for this very beautiful Odontoglossum, causes much confusion, and it may be of interest to record how the error arose. The sequence begins with Odontoglossum caloglossum (crispum × Vuylstekeae) for which Monsieur Ch. Vuylsteke received an Award of Merit at the R.H.S. meeting on January 22, 1907.

M. Vuylsteke brought a superb Odontoglossum to the Temple Show in 1909, for which he suggested the name l'Aiglon, but before entering it he decided to delete the l', making it Aiglon; however, in filling in the entry paper Aglaon was substituted and that form became the recognised name. The trouble was not yet over; the parentage was given as crispum × Vuylstekeae, which would make caloglossum. On his attention being called to it M. Vuylsteke referred to his notes and found that the parentage should be eximium × Vuylstekeae, to which the Committee agreed. The plant received a First-Class Certificate on May 25, 1909, and is recorded in *Gard. Chron.* May 29, 1909, p. 348, under its proper name and parentage.

NOTES FROM A WELSH GARDEN.

NOTWITHSTANDING the cold spring, the abundant rainfall at that season has had an extraordinary effect not only upon growth in general but upon the production of blossom—shrubs and alpines and herbaceous plants never having been so good within memory. Even those subjects which have hitherto been shy bloomers with us, notably Rosa laevigata (sinica), Carpenteria californica and some of the smaller shrubby Veronicas are carrying bountiful crops of blossom.

Conditions have been exceptionally favourable to the summer-flowering Heaths, all of which are full of promise, whilst those of the cinerea group are already in colour. This section comprises several varieties of the utmost value and distinction and all do well on the driest parts of our dry slopes where few other subjects could exist. For bold massing the robust Erica cinerea rosea is supreme during its own season. Then there is the charming variety atropurpurea, rather dwarfer, with flowers of a vivid crimson exempt from all taint of the bluish hue of the type, and the still more diminutive variety coccinea. This last is one of the most distinct of all the hardy Heaths. It barely exceeds six inches in height and the flowers it so generously yields from mid-June onwards are an intense crimson-scarlet, a colour which I have not seen in any other member of the genus.

Cistuses are now at the zenith of their glory, one of the most singularly beautiful of these being C. ladaniferus immaculatus with enormous, unblotched flowers and a most elegant habit. Among the coloured kinds C. purpureus has no rival, since it is the only one which bears a distinctive crimson blotch on each rosy purple petal. Though it is hard to make comparisons where all are lovely I think the most delightful of the self-coloured Rock-roses in the deeper shades is C. Gauntlettii (an improvement on crispus) whilst in the pinks my favour is towards the very floriferous little C. creticus and the apparently allied C. tauricus.

In a class quite by itself stands C. vaginatus, from Teneriffe, the only Rock-rose which we have as yet found rather too tender for open-ground culture. The large and very hairy leaves of this species are doubtless against it when subjected to hoar frosts, and it has not yet learned to ripen the ends of its growths before winter sets in. The flowers are handsome, some three or four inches across and of a clear rose-pink colour.

The Leptospermums are in full flower, and singularly beautiful as the rusty-red L. Nichollii and L. Chapmanii undoubtedly are, their colour appears to bleach in strong sun. Nor have they proved nearly so floriferous and vigorous with us as the pure-white, L. scoparium. L. laevigatum, which I believe is an Australian species, is also extremely pretty, much like L. scoparium, but smaller in leaf and blossom.

Among the late-flowering Rhododendrons one cannot overlook that very fragrant and in every way delightful little bush R. azaleoides (fragrans) with its large, sweet-scented trusses of white flowers flushed with lilac. R. arborescens is another midsummer bloomer of the rarest charm, its chastely beautiful white flowers and conspicuous crimson stamens enjoying the advantage of a background of fresh green foliage. R. ferrugineum and R. Wilsonii are also in full bloom on the heath slopes, and R. hirsutum, often an indifferent bloomer here, has excelled itself in the rock-garden, which, like the rest of the garden, is unusually good this season.

Of the Brooms of full summer the old Spartium junceum must always take a foremost place, but though we have endeavoured to coax it into doing so for a good many years, its ally Notospartium Carmichaeliae, has not yet shown a flower. That other almost leafless, Rush-like species, Genista aethnensis, always produces a good crop of blossom on its weeping twigs this month, but where a more striking effect is desired the Sicilian species cannot compare with the Madeiran S. virgata, which, by the way, is absolutely hardy. This, with its near relation, G. cinerea (stock of this now seems difficult to obtain) is perhaps the most valuable of all summer-flowering Brooms, and whether it is grown singly or in the mass the fine and silky, grey-green foliage and abundant racemes of yellow blossoms are most attractive.

Of the native Dyer's Genista, G. tinctoria, two kinds are worthy of special mention. One of these—the earliest variety of the species—is G. t. mantica, which makes a good subject for open woodland, even though its flowers are a somewhat brassy yellow. The other is the double-flowered variety of the type which forms a dense, prostrate growth of dark glossy-green foliage, this being smothered in July and August with a multitude of flowers in a good, full-toned yellow.

Though it is only four feet high Styrax Wilsonii is adorned with its pendant, white blossoms. Since this elegant shrub came through last winter without protection and without injury, one may consider it hardy enough for any fairly moderate climate. Fremontia californica, nearly nine feet high, has never been so heavily laden with its sumptuous golden-yellow and orange blossoms. Dendromecon rigidum has thus far flowered more sparingly, but it has made amends by shooting up wands in plenty a yard long which will bloom in autumn. Another fine subject in yellow is Potentilla Farreri, its colour being richer than that of any other shrubby Potentilla grown here, not excepting P. arbuscula—and if the blooms are to the small side they are yielded with extraordinary generosity.

A well-flowered specimen of Escallonia philippiana against the dark green of an Ivy bank is very effective, and, like others of its kind, it is particularly good this year. But the "pick of the basket" in this genus is, I think, E. langleyensis whose arching branches, bearing so copiously their rosy-carmine racemes, sweep over in a great mass with the grace of Berberis stenophylla. Even so, E. macrantha is always a favourite here, not only on account of its handsome flowers, which are produced nearly all the year round, and attractive foliage, but because of the sweetly aromatic fragrance of the latter when young.

Grouped near the above-named Escallonias is Jasminium revolutum—quite hardy with us and always a reliable and prolific bloomer. In a neighbour's garden a few day's ago we were much struck by the beauty of J. primulinus, a very distinct Jasmine with its large and solitary semi-double flowers in a rich golden yellow, but unfortunately the plant is somewhat tender.

Teucrium fruticans is always delightful from this season onwards — a tasteful harmony of pale blue and silver-grey. Other grey leaved shrubs, now approaching their most attractive season include Senecio laxifolius, S. rotundifolius and S. Forsteri. Olearia Gunniana, now going off, has been a dense mass of purest white, and when it is done O. moschata will almost hide its pretty glaucous foliage with a multitude of blossom. The two most beautiful of this genus, O. macrodonta and O. semi-denata, both suffered too severely during last year's drought to flower well this season and it would seem that they need moister conditions than the majority of the members of this genus demand. *A.T. Johnson, Talycafn, North Wales.*

INDOOR PLANTS.

CAMPANULA VIDALII.

THIS is one of the most distinct of the extensive Bellflower family and also one of the few members that are not quite hardy. It is, however, a very desirable subject for the embellishment of the greenhouse, where it flowers during the latter part of the summer. In the milder districts of the country, such as the south-west, it will stand average winters without injury, but generally speaking it must in most places be regarded as a greenhouse plant.

As above stated it is very distinct, forming as it does a markedly woody stem, one foot or thereabouts in height. From this are pushed out several wide-spreading branches, furnished on the upper part with a score or even more of wax-like blossoms. These, which are drooping, are individually about a couple of inches in length, somewhat bell-shaped, but with a markedly constricted zone around the middle. The colour is white, with a distinct orange ring towards the base of the interior of the flower. They are of a lasting nature.

The leaves are from three to four inches long, particularly stout and fleshy, and of a deep shining green tint. A well-flowered example, if the branches are supported by a stick, will attain a height of two to three feet.

As by its flowering period some of the other occupants of the greenhouse are past their best this Campanula is then particularly valuable. It produces seeds readily, and if these are sown in the spring the young plants quickly make their appearance and grow away freely. They cannot, however, be depended to flower till the summer of the year following that in which they are sown.

Cuttings may be struck, but the plants so obtained do not grow away with the same vigour as seedlings. Good specimens will require to be grown in a six-inch pot. This Campanula is a native of the Azores, from whence it was introduced in 1851. *T.*

SOLANUMS.

SEVERAL of the Solanums are well worth cultivating in glasshouses, and a few good climbers are amongst them, the most striking of which is probably S. Wendlandii. This plant is a native of Costa Rica and was introduced into cultivation in 1882. In a sunny position, in a warm house, where there is plenty of room overhead, it will bloom all the summer, and is looked upon by many as one of the very best climbers for growing indoors. This species has dark green, pinnatifid leaves, thick fleshy stems and large terminal clusters of delightful blue flowers. The cultivation of this species should be attempted in a lofty structure for it is very free in growth, and should be planted in a bed or border large enough to provide a liberal root run.

S. jasminoides var. variegatum is a climber with very much more restricted growth than the last-named and may be grown in a comparatively small space. The small, variegated leaves and numerous clusters of white flowers are very pleasing. This plant will grow nearer to perfection if planted in a bed or border, but will succeed quite well in a large pot and the growth trained to wires.

S. Seaforthianum and S. pensile are also free-flowering climbers of elegant character, very useful for draping the rafters and pillars of a warm or intermediate house.

There are several species and numerous hybrids of Solanums suitable for cutivation as pot plants and they are very useful for furnishing a conservatory, especially during the winter. These are mostly grown for the beautifully-coloured berries that are produced profusely after flowering, and S. capsicastrum, the "Winter Cherry," is prominent among them. It may be termed a greenhouse shrub.

AN INSECT WASH WHICH NEVER FAILS

We say without reserve that the "ALVESCO" SPECIAL INSECT WASH will positively kill every form of insect pest and *actually improve* the health of the plant at the same time. Some supposed pest killers kill the plant as well. "ALVESCO" is accepted as the most efficient wash offered to horticulturists. It is safe and sure.

If your Seedsman does not stock 'ALVESCO' SPECIAL INSECT WASH send us his name and address.

ALVESCO

SPECIAL POINTS.
i. It *does* kill insects
ii. It does *help* the plant
iii. It does save labour

From all Seedsmen or in case of difficulty write direct to: MURPHY & SON LTD. MORTLAKE, S.W. 14

EVERY GARDENER KNOWS THAT

Clay's gets there and makes the Garden gay all the year round

CLAY'S LONDON FERTILIZER TRADE MARK
EVERY GENUINE TIN, BAG & SEAL BEARS THIS TRADE MARK.

Sold everywhere for Horticultural Purposes in Tins at 10d. and 1/6. and in BRANDED and SEALED BAGS; 7 lb., 3/6 14 lb., 6/-; 28 lb., 10/-; 56 lb., 18/-; 112 lb., 32/- Or direct from the works Carriage Paid in the United Kingdom for Cash with Order (except Tins.)

CLAY & SON, Manure Manufacturers & Bone Crushers, STRATFORD, LONDON, E. 15.

IT IS THE STANDARD FOOD FOR PLANTS.

G.F.S.
CHEAP HORTICULTURAL GLASS

Manufacturers of
GENUINE WHITE LEAD PAINT
("Father Thames" Brand, regd.)
and of
BEST LINSEED OIL PUTTY.

GEORGE FARMILOE & SONS, Ltd.,
34, St. John St., West Smithfield, LONDON, E.C. 1
And "Blackfriars" Wharf, Upper Ground St., S.E.

Stock Lists and Prices on application.

TANNED GARDEN NETS.

Small Mesh, for Seeds and Fruit Protection

60 yards long,	1 yard wide	5/-
60 „	2 yards wide	10/-
60 „	3 „	15/-
60 „	4 „	20/-
60 „	5 „	25/-
60 „	6 „	30/-

Half lengths supplied.

STOUT BLACK NETS

For Tennis Court Bordering, with Lines Top and Bottom.

30 yards long,	2 yards wide	20/-
30 „	3 „	30/-
30 „	4 „	40/-

Standards for same 10 ft. high, 3/6 each. All carriage paid.

H. ROBINSON,
Garden and Tennis Net Works, RYE.

ORCHIDS.

Clean, well-grown and cheap; also Many Rare and Choice Varieties.
STOVE AND GREENHOUSE PLANTS OF ALL KINDS
Please send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

LOOK! TANNED GARDEN NETTING.

All orders Despatched same day as Received.

25 yards long by	1 yard wide,	2/-
25 „ „ „	2 yards „	4/-
25 „ „ „	3 „ „	6/-

Odd Net for Bush Work, 6 lbs. for 2/6.
Carriage Paid. Any length or width supplied.

MOORE & CO., NET WORKS, RYE.

WILLIS BROS.'
Garden Fertiliser

THE BEST ON THE MARKET.
NO STABLE MANURE REQUIRED.

For digging in or as a top dressing. For Kitchen Gardens or Herbaceous Borders. 1 cwt., 15/-; ½ cwt., 9/-; 28 lb., 5/-. £14 10s. per ton. All Carriage Paid.

Give our VINE MANURE a trial.

You will be well satisfied with results. It puts new life into old vines. Contains 7% Potash, 22% Phosphate, 4% Nitrogen. 1 cwt., 25/-; ½ cwt., 14/-; 28 lbs., 8/-. ½ lb. to the sq. yard, after thinning.

BEST QUALITY NETTINGS.

Heavy Tanned Garden Nets. For Strawberry beds. Diamond mesh. 8 x 25 yards, or 50 x 4 yards, 27/6 each. Carriage paid.

New Netting. Square mesh. Corded all round. Let us quote you for size you require. Light, medium, or heavy weight. 1", ¾", or ½" mesh.

Tarred Tennis Stop Netting. With lines top and bottom.

	6	7	8	9	feet high
Light quality	1/2	1/4½	1/6	1/8	per square run
Medium „	1/3	1/6	1/8	1/10	„ „
Stout „	1/6	1/9	2/-	2/3	„ „
Extra Stout	2/-	2/3	2/6	2/9	„ „

Tennis Nets and Poles supplied at Makers' Prices.
Greenhouse Blinds made to order.

GARDEN SUPPLIES AT LOWEST PRICES.

Write for our list of Garden Manures and Horticultural Sundries. Free on application.

WILLIS Bros. (HARPENDEN) Ltd.
HARPENDEN, HERTS.

NETTINGS

GARDEN NETS.—For Fruit Protection. Any widths and lengths. Corded all round.

New.—1 in. square mesh 6½d. per sq. yard
New.—¾ in. „ „ 8d. „ „
Repaired.—¾ in. „ „ 4d. „ „
Repaired.—(not corded) 1 in. Diamond Mesh, 10/- per 100 square yards.

NEW TENNIS BOUNDARY NETS.

Any widths and lengths. Corded all round 7½d. per square yard.

NEW TENNIS NETS.

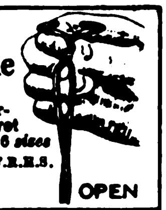
Various qualities, from 15/9 and 31/- each.

NETS FOR ALL PURPOSES.

Samples and full particulars from the manufacturers.

JOSEPH BENTLEY LIMITED,
BARROW-ON-HUMBER, HULL,
(Sole proprietors of E. Eddy & Sons).

WILLMOTT
Rival Plant Stake
(Patented No. 183770)
As used in Royal Botanic Gardens. For all plants. Will not rot wear out or break. *Samples of 6 sizes 2/- post free.* H. J. Greenwood, F.R.H.S. Bracknell, Berks.



Abol Tomato Manure

When the first trusses of fruit appear, it will be found beneficial to fertilize every week with Abol Tomato Manure at the rate of 3 or 4 ozs. per sq. yd., just before watering

7 lbs. 2/6, 14 lbs. 4/-, 28 lbs. 7/-, 56 lbs. 13/-, 112 lbs. 24/-. Trial tin 1/3 post free.

Write for descriptive folder.

Abol Limited
10, Beltring, Paddock Wood, Kent.

SPRAYING WITH

"KATAKILLA"

KATAKILLA
SOLUTION

GET THE
"KATAKILLA"
HABIT.

*"It's as Easy
as it
Looks."*

POWDER : INSECTICIDE : WASH.

DESTROYS—
GREEN-FLY, CATERPILLARS
RED SPIDER, WOOLLY APHIS
and all other Insect Pests, on
FRUIT,
FLOWERS and
VEGETABLES

In Powder Form ready for mixing with water.
Clean to Handle. *Easy to use.*
Does not harm even the most delicate foliage.
Sold in 2/- Cartons, each sufficient
to make 10 gallons Wash.
and 6/- Cartons, each sufficient
to make 50 gallons Wash.
BY
Retailers all over the Country—or direct from

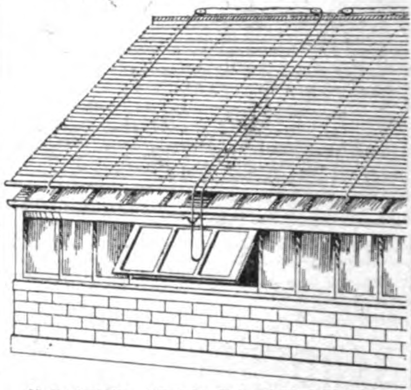
McDOUGALL & ROBERTSON, LTD.
66/68, Port Street, Manchester.

DO AS IN HOLLAND
EARN MONEY
BY
CULTIVATING UNDER GLASS.

Horticultural glass is a necessity. Prompt shipments from stock in our standard sizes: 52 × 27, 22 × 18, 22 × 14, 19 × 14 French inches. (One French inch equals 2.7 centimeters.)

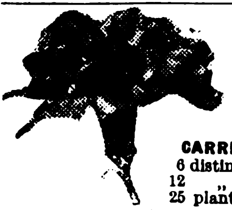
Prices on application from the
ROYAL DUTCH GLASS FACTORY
BOUVY—DORDRECHT, HOLLAND.
J.J.B.J.

SUMMER-KEEP OFF THE SUN



WINTER-KEEP IN THE HEAT
TIDMARSH
& SONS SPECIALISE IN
WOOD CHAIN-LATH
GREENHOUSE
BLINDS
TRANSENNA WORKS,
LAYCOCK STREET,
ISLINGTON, LONDON, N.1.

Eureka
GARDEN HELPS
WEED KILLER
LAWN SAND,
EARTHWORM DESTROYER
SOILFUME (DIG IN)
FUMIGANTS, INSECTICIDES, ETC.
See full lists
ASK YOUR AGENT. The Weed Killer
1/9 size, sufficient to dress 50 sq. yards,
3/- for 100, 11/- for 400, 77/6 for 4,000
LARGEST SALE. CHEAPEST TO USE.
*If any difficulty in obtaining,
we promptly send direct to you
and give name of nearest Agent*
ONLY MAKERS
TOMLINSON & HAYWARD
LINCOLN. LTD.



Perpetual Flowering
CARNATIONS
For Immediate Delivery.
Magnificent Stocks of all the best varieties ex. 3½ in. pots,
STOPPED AND BROKEN
CARRIAGE PAID COLLECTIONS
6 distinct vars. our selection 8/6
12 " " " 16/-
25 plants in var. " 30/-
A limited stock of large plants in 6 in. pots in forward bud at 45/- per doz. carriage paid. *Fully illustrated Catalogue of Carnations and Carnations Sandries post free on request.*
When you think of Carnations you think of:
Allwood Bros
The largest Raisers & Growers of Carnations in the World.
Dept. 2, HAYWARDS HEATH, Sussex.

ranging in height from one foot to two feet, with small, dull green leaves, white flowers and berries of either scarlet or orange.

S. macrocarpum, a biennial from tropical Africa, has large, spiny leaves, and scarlet, Tomato-like fruits. Though the spines borne on this species appear somewhat harshly disposed, the plant is, nevertheless, very effective.

S. hybridum, a half hardy shrub bearing orange-coloured fruit, and which grows to a height of about one foot, is much valued for table decoration.

Many of the Solanums are useful subjects for bedding in the sub-tropical garden. These are, in most cases, grown for their foliage, and perhaps the best-known is S. marginatum. This is an elegant plant with attractive deep-green foliage covered with silvery tomentum that is so thick near the edge as to form a white border.

S. giganteum is another large-leaved species, and which grows to from three to four feet high. The undersides of the leaves are white and downy.

Other useful tender species are S. robustum, S. crinitum and S. laciniatum. *H. W. Stenning, Edrington Hall Gardens, Glos.*

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

EXACUM AFFINE.

This plant has small, sweet-scented, mauve-coloured flowers, and although generally classed as a biennial, is usually treated as an annual, as it will produce its flowers in six months from the time of seed sowing. It is best sown in gentle heat early in the new year, pricking off the young seedlings into pans. When large enough the seedlings should be transferred singly to small 60-sized pots, afterwards transferring them to 48-sized pots in which they will flower. They enjoy a compost of medium loam, with the addition of a little leaf-mould or fibrous peat, with enough sand to render the mixture porous.

In its younger stages this plant is best grown in an intermediate temperature of about 55°. No stopping is required, as the plant naturally is of a neat, free-branching habit. If desired, this plant may be raised from seed sown in the previous year; by this means larger specimens may be obtained.

EXACUM MACRANTHUM.

This species has larger and more showy flowers than the foregoing; it is a true biennial and scarcely comes within the scope of these notes.

EUCHARDIUM BREWERI AND E. GRANDIFLORUM.

These are both hardy annuals, with rosy-purple flowers. As they are of a neat habit they are well suited for pot culture. The seeds are best sown early in the new year in a cool house. Beyond giving them perfectly cool treatment the cultural requirements of these plants are the same as other annuals of this class. They grow freely in any ordinary soil, and may be successfully flowered in 48-sized pots

FREESIAS.

Whilst the Freesias are not annuals it is not generally known that they may be treated as annuals, and that seedlings raised from seeds sown during March will flower the following November. The seeds are best sown about the beginning of March in a warm greenhouse, and when the seedlings are large enough to handle they should be pricked off directly into their flowering pots, which may be either of six-inch or 48-size. Prick them off somewhat closely to allow for failures, and afterwards thin them to eight or ten in the small pots, and about eighteen in the larger receptacles. The plants require very careful handling at this stage, thus it would be well for beginners to sow the seed direct into the flowering pots, afterwards thinning the seedlings to the required number. After the initial stages, when very careful watering is necessary, their cultivation does not present any difficulty: care in watering is essential and the plants need perfectly cool conditions in a light airy house, during the summer. When they have filled their pots with roots, the latter should be fed with diluted liquid manure, made from cow or sheep dung; they must also be neatly supported before the growths fall over. They succeed best in a good mellow loam, with just a little leaf-mould added, and sufficient coarse sand or old mortar rubble to keep the soil open and porous. The compost should be made moderately firm.

F. refracta alba and F. Leichtlinii may be successfully treated as annuals; the resulting corms may, of course, be used the following season if desired. The new coloured varieties are less certain in their period of flowering, and it would be unwise to depend on them to give a display from seeds the first season. *J. Coutts.*

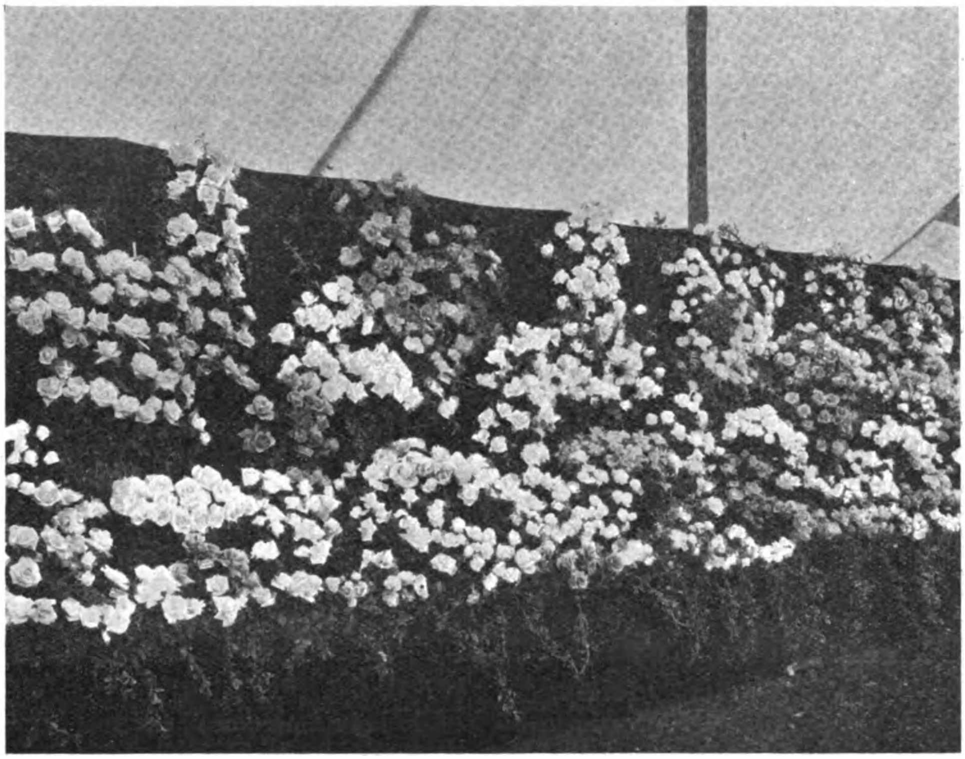


FIG. 5.—MESSRS. ALEX. DICKSON AND SONS' PRIZE-WINNING GROUP AT THE SUMMER SHOW OF THE NATIONAL ROSE SOCIETY (see p. 15).

NEW PERPETUAL-FLOWERING CARNATIONS.

The following new varieties of Perpetual-flowering Carnations have been registered by the British Carnation Society.

Coral Glow, seedling, terra-cotta, flushed bronze; size, 3½ inches; mild fragrance; compact and free; stem strong.

Salmon Beauty, a sport from Wivelsfield Beauty, deep salmon; size, 3½ inches; strong fragrance, habit and stem like its parent.

George Allwood, seedling, blush salmon; size, 3½ inches; fragrance exceedingly good, habit and stem short and very free, of commercial type.

Wembley Wonder, seedling, purple-heliotrope with buff ground over flushed cerise; size, 4 inches; fragrance strong, habit and stem very good.

Jennie Maize, sport of Jessie Allwood, deep maize, edged pink; size, 5 inches; mild fragrance, habit and stem identical with Jessie Allwood. These five varieties were registered by Messrs. Allwood Bros., Wivelsfield Nurseries, Haywards Heath.

Sir Philip Sassoon, seedling, crimson; size, 3½ to 4 inches; good fragrance, very vigorous grower, stiff stem.—Messrs. Stuart Low and Co., Bush Hill Park.

Mrs. E. Wormald, sport from Carnation Lady Alington; salmon, large flowers, sweetly scented, robust habit.—E. Wormald, Esq., Sheepwell House, Potters Bar.

Friedeswide, seedling, pale salmon-pink, fair fragrance, habit and stem good.—Hubert Blake, Esq., Tower Cottage, Alverstoke.

Bis Greenfield, seedling, deep scarlet; size, 3½ inches; medium fragrance, habit and stem stout and wiry.—Messrs. John Peed and Son, West Norwood.

Lord Revelstoke, seedling, deep cerise; size, 3 inches; mild fragrance, habit and stem good; parentage Mrs. C. W. Ward × Triumph; the calyx is very good.—Mr. A. J. Pointing, Appleton Nursery, Bulpham, Essex.

THE IRIS GARDEN.

REPLANTING IRIS GERMANICA.

Removal immediately after flowering is frequently advocated for this section of Iris and from the purely propagating point of view the practice is sound.

In most private gardens, however, the dividing of plants at this season would result in disturbing the beds and borders at an inconvenient time and when replanting is necessary it can be done with equal success in September and October whilst the soil is still warm.

Probably no other plant has been so successfully transplanted at every season of the year as this Iris, but where choice and perhaps expensive varieties are concerned it is certainly not advisable to remove them after root action has entirely ceased for the season. *W. Auton.*

RHODODENDRONS.

RHODODENDRONS IN NATURE.

(*Continued from p.* 359).

IN many parts of Asia, Rhododendrons form an important feature of the vegetation; often the most important feature. They are dominant; and for perhaps two months in the spring they enamel the mountains with brilliant and bewitching colours. In the warmer valleys they are small shrubs. At great heights, too, they are dwarfed and gnarled. Between these extremes, however, they are big shrubs, bushes, and trees—the familiar Rhododendrons of English gardens.

Ascending from the valleys the Rhododendrons increase in size. In Upper Burma, R. indicum is found as low as 2,000 feet. On the China coast, the hills at 2,000 to 3,000 feet are covered with Azaleas. R. formosum occurs at 2,000 feet in the Khasia Hills. On the contrary, in western Szechwan there are no Rhododendrons below 8,000 feet. It is not so much a matter of altitude as of climate. The following general description applies equally to Rhododendrons in western China and on the Burma-Yunnan ranges. At first the Rhododendrons are small, scattered, and except when in flower, inconspicuous. With increasing altitude they gradually increase in size and numbers. Higher yet they begin to dominate, and to form forests either by themselves or with Bamboo or Abies. It is in the middle zone that the biggest tree Rhododendrons flourish. These occur in the temperate rain forest, where it is always moist and dark. As Conifer forest begins to get the upper hand, the Rhododendrons diminish in size again, and become more gnarled; on the other hand they increase in number and variety. Towards the upper limit of Abies and Larch they tend to form entire forests by themselves, usually consisting of a few, sometimes only of one, species. Higher yet, this forest dwindles to a dense gnarled scrub, almost impossible to penetrate. Finally, on the open moorland, above the tree limit, they grow like Heather, forming an immense association composed of several species.

Thus there are several distinct Rhododendron associations, of which the chief are Rhododendron forest, Rhododendron scrub, and at high altitudes, Rhododendron moorland. Again, at moderately low elevations—9,000 to 10,000 feet—there is a more or less compact undergrowth of "Cephalanthum" species growing Heather-high, associated with one or more species of the "Lapponicum" type; or failing this, a heath of R. mollicomum and perhaps other "Scabrifolium" species, often mixed with R. racemosum. Elsewhere R. racemosum grows by itself, covering large areas.

These Rhododendron associations are composed either of one species or, more commonly, of several species, belonging to one section or to a number of distinct and perhaps unrelated sections. Even where the associations are composed of several species, however, the species themselves grow socially within the republic. It is the Rhododendron associations—forest, and scrub, and moor, which are such a feature of all that mountainous country from Nepal to central China and up and down the China-Tibetan frontier, to which the name Sino-Himalaya may aptly be given.

Rhododendron forest is usually found towards the upper limit of tree growth. On the North-east Frontier of Burma at 11,000 to 12,000 feet altitude there are forests composed almost entirely of R. arizelum, associated with Bamboo and scattered Abies, clothing the steep flanks of the mountain spurs. The red trunks of the Rhododendrons bearded with filmy Ferns grow out almost horizontally from the precipitous rocky slope; and so close together do they stand that it is not easy to penetrate the forest. In some of the high valleys, R. sino-grande forms a forest of gnarled trees with candelabra-like tops; here even the Pseudotsuga trees, though of immense size, are so scattered as to be hardly noticeable.

In North-west Yunnan, and especially in Szechwan, R. Traillianum forms forests by itself—forests which above 14,000 feet dwindle to thickets, none the less dense because of diminished stature. R. brevistylum also grows socially in mixed forest, sometimes mingled with other less abundant species; while the much larger species of the "Grande" series, such as R. grande in Sikkim, and R. coryphaeum and R. praestans in Yunnan are dominant species in their respective forests. As might be imagined, these great forests of gnarled, big-leaved trees, all foaming into flower in early spring, are a glorious sight. Among the shrill greens and yellows of breaking leaf-buds, the copper reds of infant foliage, and the obsidian Conifers, the massive inflorescences of the Rhododendrons, white, purple, crimson and citron, bursting from every branch and corner, illuminate the vast temple of the forest. Above the tree line occur dense tangles of Rhododendron scrub, two to three feet deep, the stout branches often interlacing to form absolutely impenetrable thickets.

Higher still are the moorland species, always growing socially and generally mixed. In the comparatively dry and lofty mountains east of the Yangtze are hundreds of square miles of moorland, covered with hassocks and brooms and mats of dwarf Rhododendron. In May they appear as a chromatic storm-tossed surf—rose, pink, purple, lavender, and amber—through which one may wade ankle deep for days on end. The majority of the species belong to the series "Lapponicum," and the term "Lapponicum Sea" is not inappropriate for this rainbow ocean of blossom. Here are found purple R. scintillans, lavender R. impeditum and the pale gold of R. chryseum or R. muliense, mixed with the rose-pink of R. racemosum. And there are others. Such is the Rhododendron moorland, where the plants, familiar to us as trees and bushes, grow as twigulous undershrubs no taller than Heather, with stems wiry and compact, closely interlacing; or sprawl, spread-eagled, on the rocks; or form tight tussocks, or neat brooms. When winter comes they furl their tiny leaves and droop them in slumber and for four months lie snugly buried under a warm quilt of snow.

West of the Salween, where the rainfall is heavier and the drought shorter, a similar association of dwarf species is found, though in this case they belong not to the "Lapponicum" series, but to the "Saluenense," "Cephalanthum," and "Forrestii" series, all of which carry their nodding or vertical flowers singly or in pairs. Thus on the North-east Frontier of Burma there is above the tree line at 13,000 feet a heath composed of R. myrtilloides, R. charitostreptum, R. repens, R. calostrotum, and others.

Another association of carpet-forming species is the "Cephalanthum" association of the Pine forests in North-west Yunnan, composed almost entirely of R. ledoides, or R. radinum, and R. sphaeranthum, with a woodland "Lapponicum" or R. racemosum as second string. This is assuredly one of the loveliest combinations imaginable. The flowers of R. radinum, shell-pink or ivory-white, are borne in clots on the tiny tossing twigs; and the hollows between the chequered trunks of the trees are filled with a rippling froth of blossom and aromatic green foliage. Thousands of square miles of mountainous country are clothed with this Pine park swamped in an ocean of Rhododendron undergrowth and June flowers. It may be stated indeed that most species of Rhododendrons are found growing socially; and in the great centres of Rhododendron ascendency, the societies are banded together into communities, forest, and heath and shrub.

In the temperate rain forests of Upper Burma, Rhododendrons belonging to many species and to several sections occur scattered amongst a bewildering variety of trees. Here are found for instance, R. agapetum, R. facetum, R. ombrochares, R. sino-Nuttalli, R. megacalyx, R. sino-grande, and others; most of them good sized trees. At still lower altitudes, Rhododendrons become rare, being quite overwhelmed by the sub-tropical forest. *F. Kingdon Ward.*

(*To be continued.*)

THE SPRING OF 1924.

SUCCESS in gardening is largely dependable on the weather and the years since 1921 have been most unseasonable. The drought of 1921 was intense and prolonged and 1922 started with a drought, but the weather changed and was wet for a very long period, whilst 1923 was perhaps the most trying year of all, for the spring was exceptionally cold until well into June and then followed sudden heat waves which proved almost too much for plants, especially such whose roots had not reached the cooler depth of soil.

This year again we have experienced weather quite contrary to the normal; following a wet autumn and very mild January, February to May was nothing but a prolonged winter, and every succeeding month seemed but a counterpart of what the previous one should have been. Work that is ordinarily done in one month had to be deferred until the next, and when, in May, seedlings should have been in full growth, Potatos growing fast, and even greenhouse plants in a seasonable condition, everything was equal in its development to what it should have been on the same date in April and growers began to wonder if all crops would be a month behind, until the end of the season.

It is interesting, however, that whatever the state of the weather in the earlier part of the year, by July the growth of the great majority of the plants is about normal and this year in spite of the backward spring we can safely say that never have growing crops looked so well as they have in July this year.

The abnormal rainfall, in conjunction with a high temperature, has caused vegetation to develop rapidly with the result that at the present time everything, with the exception of fruit, is in advance of its normal date of growth.

"Joy followeth adversity." The past few days of sunshine have brought the summer flowers out as they have never bloomed for years, with the result that the borders are overflowering with good things. Delphiniums never looked finer, nor have Roses promised better, and in the case of the latter plants they appear to be perfectly clear of pests. There will be more Peas than we shall have duck for and more Strawberries than cream, but the latter need plenty of sugar, as the flavour is not too good. It would be interesting to know at what period of growth the flavour is developed in the Strawberry. It is certainly not always during the colouring period. One result of the wet spring may be a crop of fungous pests, especially Gooseberry mildew, Bitter Pit in Apples and Black scab.

The prospects of the Potato crop are good and I have heard of no case of frost damaging Potatos. Doubtless all secretaries of flower shows have optimistic views for a good number of entries, for everything is promising in gardens for plentiful and excellent crops. *R. Gardner.*

NURSERY NOTES.

DRAYTON MANOR.

Drayton Manor is the name of an old farmstead in Hampshire, some few miles from Chichester, which the owner, Mr. R. G. Downer and his forebears, have farmed for many years. This peaceful place, long concerned with pursuits of husbandry, has suddenly become prominent in the world of horticulture, for, as most readers are aware, Mr. Downer is the originator of a race of most beautiful Lupins. The "Downer" Lupins, as they are termed, are in great demand for planting in gardens, and they are also being extensively cultivated by trade growers for supplying cut blooms. The plants are grown at Drayton Manor by the acre in what were formerly corn fields, and with a very fertile soil, a favourable climate and an enthusiastic cultivator, the Lupins in this nursery are grown to perfection.

In *Gard. Chron.*, March 29, p. 171, an illustration was given showing the remarkable spikes of flowers the plants produce, but the illustration conveyed no idea of the beauty of the different colours of the numerous sorts, several of which have received names. Whilst the type Lupinus polyphyllus is blue, Mr. Downer's collection includes plants ranging from white to creams, pale pinks to deep pinks, on to deeper tones of purple and rich blue. Mr. Downer, however, was not the first to give us rosy coloured Lupins, for at the Temple Show in 1904 Messrs. J. Cheal and Sons received an Award of Merit for a variety named Roseus in which the flowers were rosy-pink and pale pink in the lower half, and on the same occasion an Award of Merit was granted to Messrs. Barr and Sons for an improved strain of Lupinus polyphyllus. Some four years later, about 1907, the firm of Ruys at Dedemsvaart introduced the variety Moerheimi, which has very fine rose coloured flowers, and, until the advent of Mr. Downer's varieties, was regarded as the finest of its type. Mr. Downer's chief success is the variety named Delight, which he describes as deep red, but there is a touch of crimson in the hood, and we would consider old rose a more appropriate name for the general colour than red. Be this as it may, it is a variety of outstanding merit and received the Royal Horticultural Society's Award of Merit on May 28, 1918. This is still one of the very best of the numerous varieties to which Mr. Downer has given names, but we understand that it is not so easily propagated as some, hence it is still scarce and its price has increased. Another exceptionally fine variety is named Pink Pearls, and this also has received the R.H.S Award of Merit. The colour of Pink Pearls is a rich deep rose, and like all the plants of this strain the infloreseence is exceedingly long and vigorous.

Each season Mr. Downer raises many hundreds of seedlings and these are planted in great breadths. It needs an expert to say which of these seedlings are the best, for nearly all of them are of most beautiful colourings, the tones ranging from white through nearly all shades to dark blue. It was rather surprising to see that amongst the whole collection there was none which might be described as an outstanding yellow sort, although there are one or two good yellows in cultivation, such as Sunset, the result of other raisers. This is interesting seeing that yellow is very common in Lupinus arboreus, and we understand that it is quite easy to raise yellows from polyphyllus and arboreus, but Mr. Downer has restricted his breeding entirely to the polyphyllus type. Of the white sorts Mount Everest and Purity are the two best and there are also several of a cream shade, such as Dairy Maid and Drayton. The purples also are very beautiful; Royal Purple and May Princess, which is the darker of the two, being good examples of this shade of Lupin, and there are fine blues, including the Wedgewood Blue, Traveller, which has a white hood with blue at the base; Nublu, a very rich shade, and Saxe Blue.

In some of the varieties the keel of the flower is of a different colour to the hood, usually the hood being paler and frequently white. In Hawker the flowers at the bottom part of the spike are paler than those in the upper part, and one of the very latest novelties named after the Countess of March has pink flowers at the base and pure white ones at the top, the pink colour passing gradually to white. But of all the colours none are more beautiful than those of rose and pink shades, such as Pink Pearls, Mrs. Brock, rose pink; Witless, deep rose pink, and Seaside, a soft clear pink. Over forty varieties of Lupins are listed by Mr. Downer, and each year many choice varieties are added to the collection.

Mr. Downer has devoted a considerable area of ground to the cultivation of other hardy flowers and alpines, and his stock of these plants include many of the best things in cultivation.

CULTURAL MEMORANBA.

HOEING.

Thorough and constant use of the hoe is one of the most important operations in the garden at this season. The recent heavy rains have beaten down the surface soil to such an extent that in many cases thorough aeration of the ground is impossible, unless the ground is stirred on the surface. The depth to which the soil is moved will depend on the kind of crop; surface rooting subjects require more care in hoeing than others. As a general rule an inch of fine, pulverised soil may be secured with benefit to all garden crops.

During periods of drought this mulch of fine soil will prevent a too rapid evaporation, and during rains the water will penetrate down to the roots. There are several tools suitable for this work but the Dutch hoe is the best implement for use on medium or light land. *C. Ruse.*

PLANTING YOUNG VINES.

Young vines that were raised from eyes of last season's growth for the purpose of planting them in vineries during the present summer should be in a suitable condition for setting out in the borders. If the young vines have been grown in seed-trays the roots will not be much entangled which is likely to occur when they are grown in pots. Another advantage of this method is that they may be very easily removed from the seed-trays without causing injury to the young roots, by removing the sides of the boxes and sliding out the soil and roots into the positions prepared for them. Young vines that have been grown in trays in these gardens have made growth of the finest and give every prospect of making strong rods by the autumn. The soil of the new border should be moderately moist, but on the other hand it should not be wet as it needs to be made moderately firm by ramming.

After the soil is placed in position to receive the young vines, and any doubt exists as to it being dry, it should be watered and left for a day or two before the vines are planted. Care is needed not to disturb or injure the roots: should the vines flag they should be shaded lightly for a short time, but the shading should be dispensed with as soon as they have rooted freely in the border.

The vines should be allowed to grow unchecked, with the exception of the side laterals, which may be pinched out at the second or third leaf. The house should be closed early with plenty of atmospheric moisture, and no artificial warmth is needed during the early stages of growth. *T. Pateman, Brocket Hall Gardens, Hatfield.*

HARDY FRUIT GARDEN.

There are many complaints of barren fruit trees this season, although the promise of bountiful crops in early spring was exceptionally good. Apples and Plums are our thinnest crops; Gooseberries can scarcely be regarded as an average crop, but Pears, Peaches, Nectarines, Black Currants and Red Currants are all that can be desired; Raspberries also promise well. The fruiting of Strawberries varies very much; some sorts have suffered greatly, others but little, and there will not be an average yield of these fruits in these gardens. The general opinion seems to be that one of the chief causes of the bloom failing to set was unripened wood owing to the dull, sunless summer of 1923. The second most probable cause of failure may be attributed to the prevalence of insect pests last year. This year the failure of the Apple and Plum crops seem to be more general than that of any other fruit, and points to the wholesale destruction of the leaves last year as one of the chief causes of failure. The third reason, the unfavourable weather at blossoming time in conjunction with either of the others, probably accounts for the general failure of many varieties. With blossoms weak or imperfectly formed the abnormal amount of heat experienced at Easter and the suddenness as well as the severity of the change of weather may be the real explanation of the failure, as the blossoms looked exactly as if they had been scorched or starved.

Apples Court Pendu Plat and Evagil the two latest sorts to flower here have failed to set a single fruit, although the weather was quite summerlike when the flowers expanded, yet the latter dropped off without setting. At this [season of the year, when blossom buds are forming, growers should make every endeavour to get the wood ripened thoroughly. Little aid can be given to large standard trees in orchards except in keeping the branches well thinned to allow the sun and air to enter freely, but much can be done with wall-trained cordon and bush trees that are more under the control of the cultivator.

In their cases the most important thing is to summer prune and stop the shoots in good time to obviate useless wood growth from appropriating the sap that is needed to perfect the wood and fruit buds on the shoots that are retained. Keep the trees clean and the first crop of leaves in good condition until they drop naturally in the autumn, for if they are destroyed by insects no amount of late lateral growth will compensate for their loss, and many of the failures this year may certainly be set down to caterpillars that stripped whole orchards of their foliage last year.

On our heavy soil Apples and Plums suffered severely, which may account for our failure, yet the wet season suited trees on light soils, and they carried a splendid crop of foliage and matured their growth. No tree can perfect its fruit buds without the aid of the first crop of foliage, and to preserve these leaves in good condition should be the first aim of every cultivator.

Many trees which have failed here were laden with blossoms, the weather was fairly seasonable, and outward appearances betokened an abundant crop. We hear the remark "seasons have changed." I have no hesitation in asserting that good drainage and fairly deep working of the soil are the foundation of permanent success. Light mulchings of decayed manure in summer and working the hoe well over the ground to prevent it cracking are necessary items of routine culture every season. The mulchings encourage the roots to grow near to the surface where the soil is warm and favourable to the production of good wood and buds. Trees treated thus are not liable to canker, and although aphides will attack healthy trees, they are not so likely to be injured as weaker ones.

Our Plum trees last year were covered with aphis; this year they are clean and healthy with very little fruit. Every leaf should, so far as possible, have room for its full development by early attention to summer pruning and thinning. Yet the difficulty is to find time to do all the work claiming attention at this season. Cleansing the trees of insect pests is of such importance that it should not be neglected. Thinning the blossoms may be done with advantage if time can be spared, but I would rather thin out the fruiting spurs where they are crowded than leave them to produce blossoms which afterwards have to be removed. One point in favour of thinning the fruit spurs is that it can be done in winter when other work is not so pressing. I am well aware it is yet early to express a decided opinion of the fruit harvest, not so the pinching, cleansing and training of the trees, as next year's success depends in a great measure on the way in which the trees are now managed. If fine summer weather follows the soaking rains growth will be unusually strong, consequently timely attention must be given to the reduction of some of the shoots that the trees may receive the fullest benefit of sunlight and air. *F. Jordan, Ford Manor Gardens, Surrey.*

WEATHER CONDITIONS THAT AFFECT FERTILITY.

The failure of fruit blossom to set is nearly always attributed to frost, but this contention appears to me, after nearly forty years observations, to be inconsistent with facts. An excess of moisture and cold winds at the time when the trees are in bloom whilst the stigmas are receptive is more inimical to the fruit blossom than frost. Frost in late spring or early summer seldom does harm to fruit blossoms in gardens at a high altitude. As proving the truth of this it is often found that late spring frosts affect the Gooseberry and Currant crops, whilst the blossom of Apples and Pears on bush trees are scarcely damaged.

It is my opinion that the cause of failure in fruit setting is a starved condition of the trees, and attacks of insects and fungous pests which check their vitality, rather than frost.

When the trees are in a starved condition the stamens are puny, the pollen impotent, and the stigmas weak and unreceptive.

The life of the flower is of very short duration and the stage of fertility is soon over; it will be noticed that the blossom of the Apple, Pear, Plum, and Cherry are all set at a given time. If an examination is made of the trees when they are in bloom it will be found that the petals drop at the same time on the north side as those on the south or south-west aspects. The cause of the failure of Apples and Pears last year was the prolonged east winds that were heavily charged with moisture. It is well known that good cultivation has a great bearing on trees cropping successfully, doubtless because the conditions being suitable, the trees are enabled to develop strong flowers.

Retardation of the blossoms may be brought about by spraying with lime solutions. This was observed some years ago on fruit plantations at Mardon. Plum trees which were sprayed with lime produced bounteous crops, whilst all round the countryside the Plum crop was a total failure. In two notable seasons Apples, Pears, and Plums growing in a west aspect in an orchard were damaged by late spring frost, yet trees growing in another orchard three hundred yards away were not harmed. This difference I attributed to the difference of air pressure, air of different density predominating in drifts. *Pomona.*

FOREIGN CORRESPONDENCE.

OSTROWSKIA MAGNIFICA.

I was greatly interested in Mr. Arnott's note on p. 376 concerning Ostrowskia magnifica and therefore enclose a photograph (Fig 6) which was taken yesterday (June 22) at Floraire. This should prove that the plant is one of the tallest of all those of the macroflora of Turkestan.

Introduced by Mr. Albert Regel of Petrograd, who found it in the mountain of Farvaz in 1884, Ostrowskia magnifica was grown in the now non-existent establishment of Regel and Kesselring. It first flowered with Mr. Max Leichtlin in Baden-Baden in 1887, and I saw it there above the high steps of his terrace garden, fully exposed to the sun. Here, at Floraire, we grow it easily but it seems to be rather capricious. We planted it in a very sunny position at the foot of a wall facing south. But in such a position it never flowered freely but fell a prey to the fungus Oidium and finally died. One day we found a plant growing solitarily at the north-east side of a big Thuya occidentalis hedge. Nobody planted it in this position and we think that a piece of root was transported with the manure or old soil, as it is in a wild and neglected place of the garden. For fifteen years it has grown in this site and gives us lots of good seeds each year. We never arrest the plant in any way; it chose its own site, so to say, and lives in solitary state.

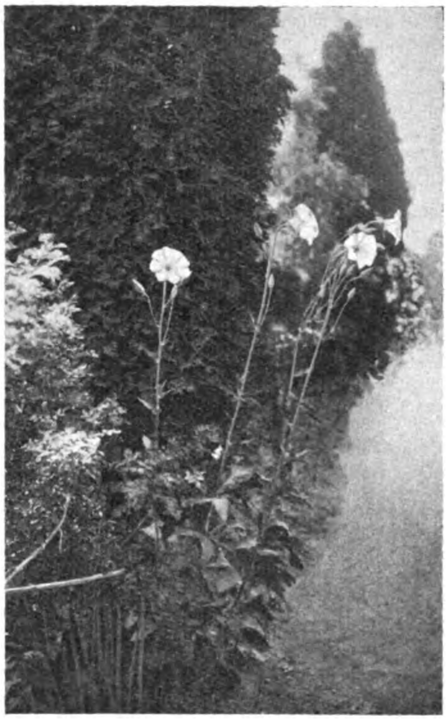


FIG. 6.—OSTROWSKIA MAGNIFICA IN THE GARDEN AT FLORAIRE, GENEVA.

Concerning Heeria elegans, allow me to state that we grow this very beautiful creeper in a half shady position in peat, and during the winter we have to cover it, indeed we always put a plant or two under glass in order to make sure of keeping it. In certain years we have lost it owing in some measure to very cold weather, but chiefly owing to the damp. *H. Correvon, Floraire, Geneva.*

[Heeria elegans is also known as Schizocentron elegans and it was shown at the Chelsea Show this year by Mr. H. Hemsley. It was fully described and figured in the *Gardeners' Chronicle* of October 26, 1907, p. 293, where it is stated that Heeria elegans was first described in 1839.—Eds.].

HOME CORRESPONDENCE.

Heeria elegans (p. 384).—A correspondent in last week's issue asks about the hardiness or otherwise of this plant. I have had it growing over large granite boulders sheltered from cold winds for the past ten years. This last winter was very trying for the plant as the frost was more severe than for some years past, and more continuous. I thought at one time I had lost it, but it has recovered and is showing its flower buds. I should state, however, that it is not hardy in this county, and that 10° of frost would kill it outright. *A. T. Boscawen, Ludgvan Rectory, Long Rock, R.S.O., Cornwall.*

Tulips in Dublin Gardens.—An interested friend, reading the notes on Tulips in *Gard. Chron.* by Rev. Joseph Jacob and Mr. S. Arnott (pp. 375-6), suggests that I should record the behaviour of Tulips in Dublin this past spring. In both the People's Gardens of Phoenix Park, and St. Stephen's Green in the heart of the city, Tulips formed the *piece de resistance* among the flowers that bloomed in the spring, appearing in a perfection rarely equalled and certainly not excelled anywhere at any time. In the latter pretty little garden-park, the gift of the late Lord Ardilaun, big beds of the scarlet and gold of Caledonia and Bouton d'Or were very conspicuous. Among the beds planted with distinct varieties *en masse*, however, those of La Tulipe Noire seemed to capture all eyes; they were massive, great satiny blooms nearly approaching black, a number of the plants giving twin flowers to a stem, some with triplets, and one single stem with four perfect blooms. My friend's query is "is this common?" *K., Dublin.*

Gardeners and their Wives.—In your issue of June 28, *Homer* asks why so many employers demand the services of the gardener's wife. His query opens up a very wide field. *Homer* is no doubt aware that many social and domestic changes have taken place during the last ten years in this country. Prior to this period the gardener-employing public had something of the "old English gentleman" in their character, and as a consequence, had some consideration for employés, including the gardener's wife. This type is now being superseded very largely by people who have made fortunes in recent years, and in very many cases their education and sense of fairplay has not kept pace with their worldly accumulations. Having no (especially their women folk) knowledge of household management under their changed conditions, they are constantly finding themselves without household helps, and as a consequence the gardener's wife is pressed into service. The housing shortage lends itself to this end, for however ignorant an employer may be of many things he is alive to the housing problem, and he knows that the offer of a cottage is an inducement to a gardener and at the same time he may claim the wife's help. Another reason is found in the financial side of the question. Looking through the vacant situations in this week's issue, I find sums offered varying from £2 10s. downwards with small cottage for gardeners. It goes without saying that no house, however small, can be maintained in decency, not to speak of comfort, on such wages, and the force of circumstances compel the gardener's poor wife to be a willing helper in many cases. I have had forty years' gardening experience, more than half of it with private employers; happily the latter half has been under public authorities. From my experience in two distinct branches of gardening service, I unhesitatingly state that the lot of the private gardener and his wife will never be improved until a proper system of organisation takes place. All trades and professions are organised to-day. Why not gardeners? *William C. Yeoman.*

SOCIETIES.

NATIONAL ROSE.

June 27.—Everything tended to ensure success for the great summer show of the National Rose Society which was held on the foregoing date in the Royal Botanic Gardens, Regent's Park. The weather was glorious, although rather too hot, for as the day wore on the blooms lost much of their beauty, as the intense heat caused many to droop and look tired. There were sixteen thousand visitors.

Competition was exceptionally keen both in the nurserymen's and amateur classes—in fact in one of the latter classes, that set aside for amateurs who have never previously won a first prize at an exhibition of the National Rose Society, there were no fewer than twenty-six competitors.

The general quality of the blooms was superb and it was noticed that many old favourites were exceptionally fine.

There were about twenty-five new Roses shown for award and of these one gained the Gold Medal and six others were granted Certificates of Merit. Many of the varieties shown had previously been granted the latter award but were not considered of sufficient merit to obtain the coveted Gold Medal. The "Seedling" Tent was, as usual, the centre of attraction and through the day a long queue of visitors waited patiently to gain admittance to the tent.

The Edward Mawley Memorial Medal offered for the most meritorious exhibit in the nurserymen's classes was awarded to Messrs. Chaplin Bros. for their magnificent seven baskets of Roses. A similar award was made in the amateur section and was gained by Dr. R. C. Turnbull for his thirty-six exhibition blooms of distinct varieties.

Awards.

Gold Medal.

Mercia Stanhope (Fig. 3).—This beautiful, fragrant H.T. variety is already in cultivation in a few gardens and was raised by Mr. Geo. Lilley, Slough, from Frau Karl Druschki, with pollen of an unnamed seedling. The illustration shows the beautiful form of the flower, which has a more refined appearance than the mother parent and it has great charm in its sweet fragrance and will supply the fragrant white Rose so long desired in our gardens to take the place of the scentless Frau Karl Druschki. The plant is of upright habit and of strong, robust growth.

Certificates of Merit.

Cecil.—This is a notable addition to the large single Roses of the Irish Elegance type, for the colour is clear butter-yellow, a glorious tone for the garden. The growths are strong, the shoots long and the pointed flower buds in association with the expanded blossoms add to their attractiveness. Shown by Messrs. B. R. Cant and Sons.

Mrs. Beatty.—A hybrid Tea variety of pale lemon-yellow colour. The flowers are very charming in the bud stage, but they open somewhat thinly. The growth of the plant is bushy. Shown by Messrs. B. R. Cant and Sons.

Mabel Turner.—A glorious, shell-pink coloured H.T. variety, with paler outer petals. It is a big, full bloom with a good centre, and will doubtless make a fine exhibition variety as well as a good garden Rose. Shown by Mr. Sandy Dickson, Hawwood, Belfast.

Superb.—This also is a pink variety of clear soft tone fading to almost blush when fully opened. The flower is of large size and the stems carry very strong, pale green foliage. It is evidently a vigorous variety. Shown by Mr. F. Evans, Reading.

Ellen Terry.—A large H.T. variety of soft lemon colour.

Ethel Chaplin.—This variety is similar to the last named but superior. The colour is a little richer and the long stiff stems are furnished with dark glossy foliage. The plant is of vigorous, branching habit. Both shown by Messrs. Chaplin Bros., Ltd.

Nurserymen's Classes.

The competition was very good in the Champion Class for Exhibition Roses, which requires seventy-two blooms in distinct varieties. The trophy was won by Messrs. F. Cant and Co. with a very rare collection of fresh blooms of good size, and of typical colouring. Of this fine collection we selected the following as being the very best. Mrs. George Marriott, Capt. F. Bald, Dean Hole, Mrs. H. R. Darlington, Mabel Drew, Florence, J. L. Mock, the Queen Alexandra Rose and Molly Bligh. Messrs. B. R. Cant and Sons, who were a good second, had especially good examples of Mrs. George Shawyer, Mabel Morse, a delightful, rich, yellow variety, which was consistently good in various exhibits: Betty Hulton, Mrs. George Marriott, Courtney Page and David Gilmore. In the third prize exhibit of Messrs. R Prior and Son there was a splendid bloom of Red Star.

The second class required three blooms each of thirty-two distint varieties, and here Messrs. F. Cant and Co. also won the premier place amongst many competitors. Varieties of pink shades were very prominent, and these included splendid trios of Ethel Somerset, Bessie Chaplin, Lady Ashtown, Edgar M. Burrell and Modesty. The second prize collection of Messrs. B. R. Cant and Sons contained more colour, and such sorts as Mrs. H. D. Barton, H. V. Machin and Lord Charlemont were vividly beautiful. The third prize collection of Messrs. D. Prior and Sons included beautiful trios of J. W. Dunlop, Edith Cavell and Archie Gray.

Mr. George Prince won the China Trophy with a splendid collection of forty-eight distinct blooms, amongst which the following were the most prominent, Diadem, Lord Charlemont, Mabel Morse, Bessie Chaplin, Mrs. E. J. Hudson, Rev. F. Page Roberts and Mrs. George Marriott. The second prize was won by Messrs. English and Son, whose best blooms were of Earl Haig, Mrs. Ambrose Richards, J. G. Glassford and Mrs. J. R. Allen. Messrs. J. Burrell and Co. were third.

The John Hart Memorial Cup was won by Mr. Elisha J. Hicks with one of the best collections in the show. His twenty-four blooms included perfect examples of Admiration, White Queen, Mrs. H. Bowles, Ethel Somerset, Mrs. Courtney Page and Capt. Kilbee Stuart. Mr. Ernest Hicks was second and Messrs. Chaplin Bros. were third.

Exhibitors of three blooms each of eight varieties were so numerous and the quality was so high that an additional prize was awarded. The first prize collection included H. V. Machin, Lord Charlemont, Columbia and Bessie Chaplin. Mr. Henry Drew, who was second, had excellent trios of Madame Jules Gravereaux and Wm. Shean.

Tea and Noisette Roses in the nurserymen's classes were far better than has been the case for many years, and on the present occasion they reached a high standard of excellence. Mr. George Prince won the first prize with delicately beautiful specimens of White Maman Cochet, Mrs. Campbell Hall, Mrs. Myles Kennedy, Alex. Hill Gray and Golden Gate. The best of Mr. Henry Drew's second prize eighteen blooms were Mrs. Edward Mawley, Lady Plymouth and White Maman Cochet.

New Roses, distributed since January 1st, 1920, were also far better than usual, and here Mr. Elisha J. Hicks won the first prize with a really excellent collection. The very best of his twelve varieties were Capt. F. S. Harvey Cant, Mrs. Henry Bowles, two good pink varieties; Mabel Morse, a glorious deep yellow; Edward Behrens, rich crimson; Souvenier de G. Pernet, a lovely shell pink, and Bessie Chaplin, a magnificent bloom which may be termed a larger and more pointed La France. Mr. George Prince was second, and he also had a splendid bloom of Mabel Morse, with the dark, fragrant Courtney Page, Bessie Chaplin, Diadem, soft pink with apricot shading, and Florence Izzard, a good yellow. The best twelve blooms of any new Rose of similar date were of Mrs. F. J. Hudson, a large pink bloom of pointed shape and somewhat coarse appearance. Messrs. B. R. Cant and Sons were second with lovely blooms of Rev. F. Page Roberts.

Baskets of Roses.

In the classes for Exhibition Roses the first prize baskets were of Chas. E. Shea, one H.T. variety, shown by Mr. George Prince; Mrs. Foley Hobbs, one T. or N. variety, shown by Mr. John Mattock and Mrs. F. Morse; any variety put into commerce since January 1, 1918, shown by Mr. Henry Drew.

The various sets of seven baskets of decorative varieties were a very attractive display. Messrs. Chaplin Bros. added to their many triumphs in this class by again winning the first prize, and on the present occasion they included excellent baskets of Admiration, Lord Charlemont, Betty Uprichard, Joseph Hill, and Mrs. Tresham Gilbey. Mr. J. Cranfield-Parker, who was second, had fine examples of Isobel, Independence Day, Mrs. Hy. Morse, and Madame M. Soupert.

Mr. John Mattock was the best of many exhibitors of three baskets, and he showed splendid blooms of Golden Emblem, Isobel and Mrs. Henry Drew. Mr. George Lilley was a very good second with Mrs. E. J. Hudson, Miss May Marriott and Madame Butterfly.

The O. C. Turner Cup, offered for the best thirty-six varieties of Decorative Roses, was won by Mr. John Mattock, whose outstanding vases were of Madame Ed. Herriot, Carine, Isobel and Golden Emblem. Messrs. J. Jeffries and Sons, who were second, had a charming vase of Sheilagh Wilson. Mr. George Prince excelled in the class for eighteen varieties, he had delightful examples of Emma Wright, Sunstar, Isobel, Christine and Golden Emblem. In the second prize collection of Mr. George Lilley, the most prominent were Mrs. E. J. Hudson, Marcia Stanhope and Madame E. Herriott.

The exhibits of twelve vases of dwarf Polyantha Roses rather lacked brightness, the first prize was won by Mr. George Prince with well flowered sprays of such sorts as Ellen Poulsen, Cecile Brunner and Canarienvogel. Mr. Henry Drew was second.

Premier Blooms.

The Society's Silver-Gilt Medals offered for the best single blooms in the show were awarded as follow:—

Nurserymen:—To H.P. Frau Karl Druschski, shown by Mr. Elisha J. Hicks; to H.T. Capt. Oswald Fitzgerald, shown by Messrs. F. Cant and Co.; and to T. White Maman Cochet, shown by Mr. Geo. Prince.

Amateurs:—To H.P. Louise Crette, shown by the Rev. F. Burnside; and to H.T. George Dickson and T. Mrs. Jules Gravereaux, both shown by Mr. J. E. Rayer. The last-named flower was also awarded the Boyes Challenge Cup for the best Rose in the amateur section.

Groups of Roses.

This year the most important class for a representative group of cut Roses staged in a space not exceeding forty feet by four feet, attracted five competitors, and the premier award was made to Messrs. Alex.

Dickson and Sons, Ltd., Newtownards, Co. Down. The winning group (see page 11) was of outstanding merit, the flowers being of the highest quality and arranged with artistic skill. True, the group lacked a representative character, but the blooms were so fine as to warrant the exhibit taking the first place. Artistic baskets with handles were mainly employed for displaying the blooms, and the arrangement evoked admiration from all. Of the many varieties shown Shot Silk proved a great attraction, its highly fragrant flowers being of a superb colouring—an admixture of orange, rose and salmon—while other eminent blooms were Clara Curtis, a fine yellow flower; Lady Inchiquin, a very attractive flower of bright orange-cerise colouring; Betty Uprichard, salmon-carmine; Betty Hulton, saffron-yellow; Ethel Somerset, glowing pink; Emma Wright, orange; K. of K., scarlet; George H. Mackereth, crimson; Maud Cuming, apricot-pink, Frances Gaunt, deep fawny-apricot; and Margaret Dickson Hamill, apricot-yellow.

The second prize was awarded to Mr. Elisha J. Hicks, Twyford, Berks, who had a very picturesque group which took the form of arches of Roses overhanging a rather too solid bank of flowers. The arches were occupied by such magnificent varieties as Mrs. H. Stevens, Hoosier Beauty, Golden Ophelia, Climbing Mme. E. Herriot, Butterfly, and Los Angeles, all employed on the front portion of the arches, the back being clothed with Wichuraiana and climbing varieties such as Romeo, deep red; Emily Gray, yellow, Joseph Lamy, white; Climbing Seagull, white; and Jules Levacher, pink. Melody, Lady Inchiquin, Lord Charlemont, clear crimson, Mrs. S. K. Rindge, chrome-yellow; Cupid, Padre, K. of K., and Clovelly, pink, were also to be seen in excellent condition.

The Rev. J. H. Pemberton, Havering, whose group comprised most of his own seedlings and was particularly rich in hybrid musk and multiflora varieties, was deservedly placed third, the fourth prize being awarded to Messrs. John Waterer, Sons and Crisp, Ltd., Twyford.

In the class for a similar group arranged in a space twenty feet by four feet Messrs. Chaplin Bros., Waltham Cross, were placed first out of no fewer than seven competitors. There was a central archway of Paul's Scarlet Climber, and the varieties Mabel Morse, a fine yellow; Mrs. Henry Bowles, pink; Toison d'Or, apricot-yellow; Mrs. R. D. McClure, salmon-pink; and Mrs. Charles Lamplough, soft lemon, were represented by perfect blooms.

Messrs. A. J. and C. Allen, Norwich, followed a close second, and showed the two Dutch-raised varieties Hortulanus Budde, rich red, and Miss C. E. Van Rossem, velvety red in excellent form. There were also splendid masses of Golden Emblem, Los Angeles, Mabel Morse, Mrs. Beckwith, lemon yellow; and Betty Uprichard. The third prize went to Mr. W. Easlea, who had fine specimens of Melody, Aspirant Marcel Rouyer, deep apricot, and Gorgeous in his group. Messrs. G. Jackman and Son, Woking, were placed fourth.

Competition was also very keen in the class for a group arranged in a space ten feet by three feet and the first prize was awarded to Messrs. Jarman and Co., Chard, who staged a very pleasing group. Independence Day, General McArthur, Lady Curzon, Padre and Ophelia were a few of the best varieties. Messrs. R. Harkness and Co., Hitchin, also had an effective arrangement with arches covered with Independence Day, Mrs. H. Stevens, Lady Hillingdon, Paul's Scarlet Climber, and Madame E. Herriot. Vesuvius, a bright scarlet single bloom was also shown in the group. Mr. John Mattock, Oxford, was placed third and Mr. T. P. Edwards, Southgate, was fourth.

Amateur Classes.

The amateur classes were staged in a separate tent and competition was keen throughout. The quality of the blooms was exceptionally fine. In the main class for exhibition flowers—namely that for thirty-six blooms, distinct varieties—Dr. R. C. Turnbull, Colchester, led with a fine collection and was awarded The Champion Trophy. He showed perfect flowers of Marchioness of Ormonde, straw coloured; Mabel Drew, Mrs. Charles Lamplough, St. Helena, cream, flushed pink; Lady Barham, coral pink; Mrs. Franklin Dennison; Capt. Kilbee Stuart, crimson, and Lady Inchiquin. The second prize was awarded to Capt. W. Jarratt Thorpe, Gloucester, whose best blooms were Mrs. Charles E. Russell, Gladys Holland, Mabel Drew, and Mrs. H. Morse. Mr. F. H. Fieldgate, Colchester, was placed third. There were five exhibits in this class. Dr. R. C. Turnbull was also the premier prize-winner out of six competitors in the class for twenty-four blooms, distinct varieties, and showed Souvenir de Claude Pernet, Mabel Drew, Mrs. H. Morse, and W. H. Walsh in excellent form. Capt. W. Jarrott Thorpe and Mr. F. H. Fieldgate were second and third respectively.

The Foley Hobbs Memorial Cup, offered for twelve exhibition blooms, distinct varieties, was won by Mr. J. E. Rayer, Worcester, who showed one of the best dozen blooms we have ever seen. He also carried off the rare accomplishment of winning the Silver-Gilt Medals for the best Hybrid-Tea and best Tea blooms in the amateur classes with blooms in this exhibit, the flowers selected for this distinction being George Dickson and Madame Jules Gravereau. Mr. F. H. Fieldgate was second and the third prize went to Mr. C. C. Williamson, Canterbury.

The last-named competitor was chief prize winner in the class for two baskets of cut Roses, in two varieties, and showed Mabel Drew and W. R. Smith. Mr. J. N. Hart, Potters Bar, was second, and Mr. J. N. Dunn, Stroud Green, followed third.

In the classes open only to growers of fewer than one thousand plants, Mrs. H Balfour, Oxford, and Mr. C. N. Rigg, St. Albans, were first and second respectively in the class for twelve exhibition blooms, and the order was reversed in the class for a basket of cut Roses. Other chief prize-winners in minor amateur sections were Mr. A. R. Reeves, Gosport: Mr. H. H. Claydon, Bishops Stortford: Mrs. R. B. Molony, Hastings; Mr. T. C. Wiseman, Faversham; Mr. G. L. F. Cook, Hayes, and Mr. W. P. Pankridge, Petersfield.

In the Metropolitan class confined to growers within a radius of ten miles of Charing Cross, Mr. A. N. Rogers, Putney, secured first prize for six blooms, and he also led in a similar class for six Roses grown within an eight-mile radius as well as a five-mile radius.

In the section open to members who grow their own flowers without any assistance, the chief first prize-winners were Mr. W. G. Bambridge, Kettering, for twenty-four blooms, distinct varieties; Mr. C. N. Edwards, Carshalton, for twelve blooms, distinct varieties: and in the minor classes Mr. W. P. Pankridge, Mr. J. I. Ingold, Boston, Lincs., and Mrs. L. A. Tilley, Northwood.

In the open classes for Tea and Noisette varieties the Rev. F. R. Burnside, Gt. Stambridge Rectory, Essex, secured the first place in the class for twelve distinct blooms; his flowers of Souvenir de Pierre Notting, W. R. Smith and Alex. Hill Gray were of fine merit. Captain W. Jarrott Thorpe and Mrs. H. Balfour were second and third respectively. For nine blooms, open to growers of fewer than two hundred plants of Teas and Noisettes, Mr. W. E. Moore, High Wycombe, was first, followed by Dr. R. C. Turnbull, while in a similar class, open to growers of fewer than one hundred plants Mr. A. R. Reeves secured the first prize.

The groups of Roses exhibited by amateurs were better than we have ever before seen them although many exhibitors cramped their flowers. In the class arranged in a space six feet by three feet Dr. M. Lacroze, Roehampton, secured the first prize, who used arches, running diagonally, entwined with scarlet and white Roses, the groundwork consisting of splendid vases of K. of K., Golden Ophelia and Mme. Leon Pain. The other exhibitor, Mr. G. Marriott, Carlton, Notts. was placed second, and in his group Emma Wright was shown exceedingly well. For a smaller group staged in a space five feet by three feet, Mr H. R. Darlington, Potters Bar, was first, followed by Mr G. Marriott and Mr. H. Barton, Chappel. respectively, while for a small group open to growers of fewer than five hundred plants, Mrs. E. M. Wightman, Hitchin, took leading honours.

In the classes devoted to single baskets of Roses, Mr. C. C. Williamson. Mrs. V. E. Cribb, Northwood; Miss Beatrice H. Langton, Hendon; Mr. T. C. Wiseman, and Mr. G. Barker won in each of their respective classes, while in the classes for vases of Roses, Mr. F. Slaughton, Steyning; Mr. A. C. Turner, Woking, and Mr. W. E. Moore, High Wycombe, were the premier prize-winners.

Artistic Classes.

These classes were for tables decorated with Roses, bowls of Roses, and vases arranged with Roses for effect. Two of them were open to all competitors and seven open only to amateurs. The latter classes were by far the most important, and the table decorations constituted the main features and were almost sufficient to fill the very large tent which was allotted to these classes.

In the open section the schedule called for a decoration of cut Roses for a dinner table, lightly arranged with Rose foliage only, and in this seven competed. The first prize was awarded to Mr. L. R. May, Waltham Cross, whose arrangement consisted of a beautiful centre bowl of Rose Ophelia relieved with sprays of red Rose shoots, and six smaller vases, one of these being placed at each corner, the other two between the smaller vases and the large bowl. The quality of the Roses was exceptionally fine, and as this variety and its sport, Mme. Butterfly, are two of the best Roses for table decorations, they figured conspicuously in the prize list all through; indeed, it was obvious that in many cases the quality of the Roses, rather than the method of decoration, was responsible for winning the prizes. Miss M. Foden, Hemel Hempstead, was placed second for a beautiful decoration in which she employed Mme. Butterfly in a dainty gold basket with smaller gold baskets as corner pieces. It was very pleasing to see Molly Sharman Crawford shown so well in the exhibit which gained the third prize: this beautiful white Rose, decorated with ruby-tinged Rose sprays, was exceptionally charming.

The finest bowl of cut Roses in the open classes was shown by Miss M. Foden, who used the variety Mme. Butterfly, the splendid blooms having exceptionally long stalks which facilitated the arranging of the vases to advantage. The second prize was a basket of Ophelia shown by Mrs. C. A. Tisdall. Woodford Green, whilst the third was the beautiful scarlet K. of K., arranged by Mrs. A. R. Bide, Farnham.

In the amateurs' section a special class for a decorated dinner table was allotted for single-flowered Roses only. Mrs. A. D. Ruff, Sharnbrook, Bedford, won the first prize with an exhibit of a novel character, the centre piece consisting of a tiny Rose arch made with Scotch Pine shoots, to which small glass holders carrying splendid bloom of Irish Elegance were attached. Tiny stands made also of Scotch Pine, holding glass vases, were utilised as corner pieces and these also were filled with Irish Elegance Roses. The second prize was awarded to Mrs. H. Barton, Chappel, Essex, for a decoration consisting of a central bowl and small corner glass vases filled with fine flowers of Isobel and decorated with shoots of Rosa sericea pteracantha. There was a very nice decoration by Mrs. Colston Hale in which dainty gold baskets were filled with Irish Elegance.

In the class for Roses other than single flowered, Mrs. Courtney Page was an easy first prize winner, her design consisting of a centre bowl of exceptionally fine blooms of Mme. Butterfly with sprays of Rose species, such as R. Willmottiana. This was a very beautiful exhibit and nicely arranged, and the high quality of the blooms would have won a prize for any exhibit. Miss E. Griffith, Finchley, was second with a very pleasing decoration in which she employed Golden Ophelia, arranging a big centre bowl of this variety and four corner vases. It was to be regretted that a fine exhibit by Miss E. L. James was disqualified in this class, because one or two stems of the Rose shoots used for decoration were not in water, thus contravening the conditions of the schedule. The exhibit of Lady Roundway Roses of Apricot-orange colour in quaint glass-handled receptacles by Mrs. F. Oakley Fisher, found many admirers, but it was rather on the heavy side and the blooms somewhat blown. Mrs. Courtney Page had also an easy win in the class in which the flowers and foliage were grown and staged by the exhibitor without assistance. She showed Emma Wright and Sunstar, the orange and gold tints making a pretty blending, but the exhibit was not comparable with her other effort, mainly because the quality of the flowers was poor. Mrs. F. Oakley Fisher was second in this class with Irish Elegance arranged in a number of small glass bowls with handles connected with chains of lustres. The exhibit of Mrs. Courtney Page in the class for a bowl of mixed cut Roses, in which eight competed, stood out conspicuously above all others for the brilliancy of colour and fine quality of the blooms, which were of numerous varieties. The use of Rosa sericea pteracantha and rosy-coloured Rose sprays was simple but elegant.

Miss E. West, Reigate, was placed first in the class for a bowl of cut Roses lightly arranged with Rose foliage only, and small buds were permitted with the added foliage. The variety employed was Mme. Butterfly; second, Mrs. Colston Hale, with the single variety Mrs. Oakley Fisher. The best vase of cut Roses was shown by Miss E. West, who employed the variety Mme. Butterfly, whilst the first prize for a bowl of Roses by a lady amateur who has never won a first prize, was won by Mrs. F. Peters Wood, Weybridge, with the variety Ophelia. Thus, either Ophelia or its darker coloured sport Mme. Butterfly were the favourites with both exhibitors and judges in these artistic classes.

ROYAL HORTICULTURAL.

Trial of Schizanthus.

The following awards have been made to Schizanthus by the Royal Horticultural Society after trial at Wisley.—

Awards of Merit.

Snowflake (*Wisetonensis type*); *Wisetonensis* "*Excelsior*," both sent by Messrs. Watkins and Simpson; *Wisetonensis* "*Giant Prize Strain*," sent by Messrs. Barr and Sons; *Wisetonensis Pylewell strain*, sent by Mr. W. F. Hamilton, Lymington; *Giant Flowered* (*Wisetonensis*), sent by Messrs. Clibrans; *Chislehurst Giant Hybrids*, sent by Messrs. Barr and Sons; *Tall Giant Flowered Hybrids*, sent by Mr. W. H. Simpson.

Highly Commended.

Wisetonensis Pink Pearl, sent by Messrs. Barr and Sons; Superb (Wisetonensis), sent by Messrs. Godfrey and Sons; pinnatus White, sent by Messrs. Toogood and Sons; Butterfly (Wisetonensis), sent by Messrs. J. Carter and Sons; New Dwarf Hybrids (Wisetonensis), sent by Mr. A. Dawkins; Dr. Badger Improved, sent by Messrs. Dobbie and Co.; Hybrids, sent by Mr. E. C. Heinemann, Erfurt, Germany; pinnatus "White Beauty" and Papilionaceus, both sent by Messrs. Barr and Sons; Large-flowered Hybrids, sent by Messrs. J. C. Wheeler and Son.

Trial of Wallflowers.

The following awards have been made to Wallflowers after trial at Wisley:—

Highly Commended.

White Gem, sent by Messrs. Dobbie and Co.; Linnaeus and Ivory White, both sent by Messrs. Barr and Sons; White Dame, sent by Messrs. R. Veitch and Son and Messrs. Barr and Sons; Primrose Dame, sent by Mr. F. Dicks, Manchester, and Mr. T. Cullen, Witham; Extra Dwarf Golden, sent by Messrs Barr and Sons; Golden Monarch, sent by Watkins and Simpson; Tall Golden, sent by J. Carter and Co.; Golden Queen, sent by Mr. T. Cullen, Witham; Golden Bedder, sent by Messrs. Barr and Sons; Harbinger, sent by Messrs. Barr and Sons, and Mr. F. Dicks, Manchester; Dresden, sent by Messrs. Barr and Sons; Vulcan, sent by Messrs. Watkins and Simpson, and Mr. J. Fitzpatrick, Ashton-under-Lyne; Blood Red Selected, sent by Messrs. J. Carter and Co.; Blood Red, sent by Mr. F. Dicks; Goliath, sent by Messrs. Barr and Sons, Mr. F. C. Heinemann, Erfurt, and M. M. Rivoire, Lyon (sent as Royal Purple by the last firm); Ellen Willmott, sent by Messrs. Watkins and Simpson; Cheiranthus Allionii, sent by Messrs. R. Veitch and Son.

NEWPORT (MON.) GARDENERS.

On Thursday, the 26th ult., this Society held its second annual Rose Show in aid of the Gwent Hospital, which benefited to the extent of £135 from this source last year. Much credit is due to the chairman, Mr. C. Basham; the vice-chairman, Mr. F. S. Daniels; the hon. secretary, Mr. H. G. Garland; the assistant hon. secretary, Mr. W. E. Lewis; the hon. treasurer, Mr. A. W. Davis, and an able Committee who were untiring in their efforts to make the show a success.

The exhibition was opened by the Mayoress of Newport (Mrs. Charles Williams), supported by Sir Garrod Thomas (President), in the gardens of The Grange, Stow Park, kindly lent for the purpose by J. E. Evans, Esq. and Mrs. Evans; the function was a great success.

The first prize winners were as follow:—

Open Section: Twelve blooms, distinct varieties, Messrs. Treseder, Ltd., Cardiff; twelve blooms in four varieties, Mr. M. Preece, Newport; three vases of rambler or polyantha varieties, Mrs. Blethym T. Reel, Caerleon.

Gentlemen's Gardeners and Amateurs: twelve blooms, distinct varieties, Sir H. Webb, Bart., M.P. (gardener, Mr. A. S. Coles), twelve blooms in four varieties, Sir H. Webb; nine blooms in not fewer than three varieties, Mr. E. Brown; six blooms, distinct varieties, Mr. Alan Gibbs; a vase of twelve blooms, Sir Garrod Thomas (gardener Mr. W. E. Lewis); a bowl of Roses, twelve blooms, in three varieties, Sir Garrod Thomas; a vase of rambler Roses, Sir Garrod Thomas; a vase of single Roses, Mr. Alan Gibbs.

Amateurs or Cottagers: twelve blooms, in four varieties, Mr. E. Evans, Newport; nine blooms, in three varieties, Mrs. F. H. Sheppard, Rhiwderin; six blooms, distinct varieties, Mr. A. Berry; three blooms, distinct varieties, Mrs. F. H. Sheppard; nine blooms, of any one variety, Mrs. T. Cole; a vase of Rambler Roses, Mr. A. Watkins.

Ladies' Section: Decorated table (Roses with own foliage), Mrs. W. Wallner; decorated table (girls under 18), Miss Ethel Wallner; lady's spray and gent's buttonhole, Mrs. M. Cole.

Special Classes (Open): Hand bouquet of Roses, Mr. F. H. Mordey; group of miscellaneous plants, Sir Garrod Thomas; six spikes of Delphiniums, Sir H. Webb; six vases of hardy flowers, Mr. Allan Gibbs; six vases of Violas, Mrs. F. H. Sheppard; three vases of Sweet Peas, distinct varieties, Mrs. F. Kelly.

The prize for the best Rose in the show was awarded to Sir H. Webb. *W.E.W*

CHELTENHAM FLORAL FÊTE.

Though the garden town of Cheltenham provides a beautiful setting for a flower show, for one reason or another there has been no event of this kind for a long time until last year, when a summer show was held in connection with a hospital fête, through the efforts of local horticulturists and members of the Cheltenham Chamber of Commerce. The first show was a success, it set people talking about Cheltenham's summer shows of the past when specimen stove and greenhouse plants were at the height of their popularity and before the horticultural trade made such contributions to these events as it does to-day. Encouraged by the success of their first effort the local committee decided to have a second show, which took place on June 25 and 26, and being favoured with beautiful weather a floral exhibition, better probably than ever held in the old days, was enjoyed by a crowd of visitors. It is assumed that the show will now become an annual event and next year the committee will do well to provide a wider tent that will lend itself to grouping and do away with that "up one side and down the other" idea which is now out-of-date at big shows.

While competitive local classes were provided for Roses, Sweet Peas, herbaceous plants, table decorations, groups of plants and wild flowers, the show was mainly commercial, and the trade is to be congratulated on the way it supported the Cheltenham effort. Cheltenham is the home of the Cyphers, and this famous firm put up one of their characteristic groups of choice greenhouse plants and Orchids. Other local firms who exhibited well were Messrs. Hopwood and Sons, Petunias and hardy flowers; Messrs. Yates and Sons, Poppies and Gladioli; Messrs. Barrett and Sons, flowering plants; and Mr. W. H. Walters Rincombe, choice hardy plants. Roses in charming variety were shown by Messrs. English and Son, Messrs. Fuller and Mayham, and Messrs. Beckett and Barnes.

The Gloucestershire Fruit and Vegetable Co-operative Marketing Society, which controls the Cheltenham fruit and vegetable market, made a display of choice produce, packed for transit in the non-returnables used in this market. From further afield there was an imposing display of flowers and choice vegetables from Messrs. Sutton and Sons, Reading; Sweet Peas and Violas from Messrs. Dobbie and Co., Edinburgh; Carnations from Mr. C. Engelmann, Saffron Walden, and Messrs. Young and Co., Hatherley; Roses from Messrs. F. Cant and Co., Colchester; Delphiniums from Messrs. Blackmore and Langdon; Poppies from Messrs. Bakers, Wolverhampton; and hardy herbaceous flowers from Mr. W. Wells, Merstham. In fact the show was described by one enthusiast as "a small Chelsea in the provinces," and with more of the Chelsea space and the Chelsea grouping scheme it is quite on the cards that this effort of Cheltenham may grow into something really big in the future.

READING AND DISTRICT GARDENERS'.

The Second Summer Evening Meeting of this Association was held on the 25th ult., at Aldermaston Court, the residence of Mr. C. E. Keyser, M.A. Over seventy members participated in the outing and a very enjoyable evening was spent in inspecting the gardens and pleasure grounds. The visitors were received by Mr. F. J. Green, the gardener, who conducted them through the gardens and glasshouses. The rockery certainly claimed much attention. This is situated among trees on the side of a bank and its beauty is enhanced by a running stream falling over miniature boulders. The grounds contain many fine specimens of trees and much interest was manifested in the magnificent Oaks, Spanish Chestnuts, Cedars and Scotch Pines. At the conclusion of the ramble refreshments were provided by Mr. Keyser in the Club House. Before separating, the President, Mr. Councillor F. E. Moring, proposed a hearty vote of thanks to Mr. Keyser for his kindness in permitting them to visit the gardens and grounds of Aldermaston Court and for his hospitality. A similar vote of thanks was accorded to Mr. Green for his kind attention. These were seconded by Mr. M. Goddard, chairman, and carried with acclamation.

TRADE NOTES.

No Potatos grown in an Infected Area may be moved or consigned to any place in England and Wales which is not in an infected area. This requirement applies to all classes of Potatos, whether first or second early and whether intended for seed or for consumption. The only exception is that of ware tubers of approved immune varieties and these must be accompanied by a statement to the effect that they are of an approved immune variety and that they were grown in an infected area.

Infringements of the Order in this respect have been known to occur, and in two cases recently the Ministry has instituted legal proceedings which have resulted in the conviction of the defendants with fines and costs in each case. The question was recently raised as to whether any exception to the rule could be made in order to allow first early varieties grown in the infected area in South Lancashire to be sent for consumption to large towns in Northern Lancashire and the West Riding of Yorkshire. The matter was referred for consideration by the Ministry's Potato Advisory Committee composed of representatives of all the various branches of the Potato industry who were unanimous in recommending that no exceptions should be made and that the Order as it stands should be vigorously enforced.

We understand that the Atco Motor Mower has recently added to its fame by gaining the only Medal in its class at the recent Dublin Show.

Messrs. Dennis Bros., Ltd., noted so long for their motor vehicles, have recently concerned themselves with the manufacture of a high grade motor lawn mower. This machine is fitted with a silent four-stroke, four H.P. engine and the driving and cutting cylinders have independent clutches enabling the machine to be used for rolling only when so desired. The differential gear enables it to be driven on all three rollers and to turn easily in its own ground, thereby making flower beds and awkward corners to be easily negotiated with a minimum of effort.

ANSWERS TO CORRESPONDENTS.

Diseased Chestnut Trees: *W. H. H.* There is nothing about the bark sent for examination that would account for the death of the trees; any fungus that is present is saprophytic and has appeared after certain sections of bark or wood have died It is probable that the death of the trees is due to the great drought of 1921. Chestnut trees in many parts of the country were adversely affected during that year, but did not show serious injury until a year or two later. The root system suffered and certain roots were killed, letting in disease which gradually weakened or killed the trees. The first signs of disease are usually short, weak shoots, and undersized, thin leaves.

Gardener's Expenses.—*R. S.* So far as we understand the case, we agree that you were justified in refusing to pay the excessive expenses asked by the applicant, especially as it is fairly obvious that travel in reasonable comfort could be made at a much lower cost.

Gooseberries: *D. W.* The Gooseberry fruits are affected with the American Gooseberry Mildew fungus. The bushes should be sprayed at once with a solution of lime-sulphur (summer strength) or ammonium polysulphide. These fungicides are difficult to prepare at home and you would be well advised to obtain them in concentrated forms from a reliable firm of horticultural chemists. Diseased shoots affected with the resting spores of the fungus should be removed and burnt when pruning is performed in the winter.

Names of Plants: *F. S.* Buddleia globosa. *A. W.* Astrantia major. *W. B.* Scilla italica. *H. F. Z.* Eucalyptus polyanthemos; the bulb is Zephyranthes carinata, an Amaryllid, native of Jamaica, Cuba, and South America; the British Orchis is Habenaria bifolia. *A. M.* Stachys grandiflora (syn. Betonica grandiflora). *L. E. X.* Cytisus racemosus. *W. T. B.* Prunus Cerasus var. Rhexii fl. pl. *J. C.* The specimen is a fruiting catkin of one of the Black Poplars, probably Populus nigra betulifolia. If the catkin is a small one for the tree, it might be Populus marylandica. A good leaf of the tree would have settled the point. *G. S.* Buddleia globosus. *Gardener, Herts.* A form of Aster sub-coerulea. *W.H.F.* We cannot undertake to name florists' flowers; 6, Lonicera sempervirens; 7, Ligustrum japonicum.

Roses Unsatisfactory: *E. W.* The cause for the unsatisfactory condition of your Roses may be found in the poor soil you have to deal with and also in the nearness of the large Wellingtonia which, no doubt, shades the Roses too severely at certain periods of the day and also by means of its roots robs the Roses of a great deal of the food material in the soil. Your best course would be to plant the Roses in a more open position further away from the Wellingtonia, and, if necessary, place some good loam and manure in the soil when making the new bed.

Scalded Grapes: *H. W. R.* and *F. W.* The Grapes are affected by what is called 'scalding.' This is caused by great fluctuations of temperature during the stoning period, which commences about a month after the first flower opens, and continues for about another month. Berries are liable to be affected where the sun's rays never reach, and even during darkness, if the temperature is raised to about 90° as is sometimes done when vapourising sulphur on hot pipes. The skin during this period cannot expand, whereas heated water, which probably constitutes 90 per cent. of the berry, will do so, if the high temperature is sufficiently prolonged. In certain varieties, Madresfield Court for instance, the skin bursts, in others, the cells become ruptured. If the temperature during this critical period can be kept somewhere between 55° and 80°, with ample ventilation, these mishaps are not likely to occur. The samples of fruit and leaves show other cultural faults. The leaves, before the excrescences appear, have an unnaturally dark green colour, suggesting too much nitrogenous feeding, and the comparative softness of the stems point in the same direction. The intumescences frequently develop on leaves which are short of plant food when first produced and too much warmth and atmospheric moisture is favourable to their increase. Considering the advanced stage of stoning, the berries sent are small and some are seedless, produced from unfertilised flowers. There is, probably, a deficiency of lime or of phosphates in the border. To prevent a recurrence of these mishaps we advise a dressing of seven pounds of steamed bone flour and four pounds of sulphate of potash to the perch. If there is no mortar rubble in the border, add also a peck of lime, slaked before it is placed in the house.

Tulip Bulbs Diseased: *A. M. W.* The bulbs are affected with a fungous disease (Sclerotium tuliparum). Bulbs which have shown very poor growth should be lifted and burned, otherwise the soil will become infected with the resting spores of the fungus and rendered unfit for Tulip cultivation for three or four years. It is very likely that the other bulbs will also be slightly infected and the stock should be lifted so soon as the foliage dies down. They should be dried, cleaned and stored in a well ventilated shed until about the middle of August, after which time it is advisable to give the bulbs warmer conditions — about 70°. The bulbs should not be planted before the middle of November.

Under-gardener's Notice to Quit.—*H. G. G.* The question of what length of notice an under-gardener must give or is entitled to receive cannot be answered with any certainty as there has been no decision of the High Court on the point. It has, however, been decided that a head gardener is entitled to a month's notice, and there have been at least two decisions by County Court Judges that the same applies to an under-gardener, but such decisions are not binding on other Judges. The matter really turns on the custom in the particular locality. Your present employer cannot determine your employment except by giving you the same length of notice as he is entitled to receive from you.

Vines Unsatisfactory: *H. W.* Vines can never be grown satisfactorily in the soil of which you send a sample. It is much too light in texture, consisting largely of the remains of manure and vegetable matter. A good medium loam should form the staple, and if it contains a fair amount of the roots of grass, there will be no need to add organic manure for a year or two after planting. Phosphates, in the shape of bone-flour and superphosphate, potash and lime are necessities. From 2 feet to 2½ feet is ample depth for the border. If the Vines are worth it, they may be replanted as soon as the primary leaves have changed colour, but a new border is an imperative necessity. Warted leaves, when now caused by faulty atmospheric conditions, indicate a natural attempt to make up for primary deficiencies.

Communications Received. Unit.—D. G. L.—A. W.—A. F.—W. R. T.—J. B.—M. J. W.—W. R.—H. W. J.

THE
Gardeners' Chronicle
No. 1959—SATURDAY, JULY 12, 1924.

CONTENTS.

Alpine garden—
  Campanula nitida ... 21
  Dianthus Lereschei ... 21
Books, Notice of—
  Botanical Magazine ... 20
Bulb garden—
  Snowdrops 27
Clay Challenge Cup, award of the 20
Davenham Garden, Malvern, opened to the public 20
Fruit garden, market ... 30
Fruit garden, the hardy—
  Raising Seedling Apples 30
Fruit Register—
  Strawberry The Duke 31
"Gardeners' Chronicle" seventy-five years ago 21
Gardeners over forty ... 32
Gardeners, the training of young 25
Garden-craft in the Canticles 26
Garden notes from S.W. Scotland ... 24
Glover, Mr. T. A., retirement of 21
Grain, imports of ... 20
Hardy flower border—
  Phlox Arendsii ... 23
  Trollius 23
Horticulture at the British Empire Exhibition—
  Plant-breeding and seed-testing ... 28
Nursery Notes—
  Laxton's Strawberries 32
Obituary—
  Quainton, E. J. ... 36
  Veitch, Sir Harry J. 19
Orchid notes and gleanings—
  Odontoglossum crispum Lady Jane 25
Pinus rudis 32
Rhododendrons... ... 24
Rose garden at Kew 29
Societies—
  Royal Horticultural 33
  Streatham Rose and Sweet Pea 35
  Windsor and District 35
  Wolverhampton Floral Fete 35
Trees and Shrubs—
  Berberidopsis corallina 31
  Cotoneaster hupehensis 31
  Piptanthus nepalensis 31
  Spiraea bracteata ... 31
Tulips, yellow-flowering 32
Veitch, the late Sir Harry J. 19
Week's Work, the ... 22
York Gala 20

ILLUSTRATIONS.

Odontoglossum crispum Oakfield Sunrise 25
Rodgersia Purdomii 23
Rose Garden at Kew, views in the 29, 31
Rose Mabel Turner 21
Snowdrops, an artistic and natural grouping of ... 27
Veitch, Sir Harry J., portrait of the late 20

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 63·2.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 9, 10 a.m.: Bar. 30.1°: temp. 62°. Weather, Showery.

Sir Harry J. Veitch, V.M.H.

IN every country where gardening is practised, but chiefly in Great Britain, horticulturists will learn with the deepest regret of the death of Sir Harry J. Veitch, V.M.H., which occurred on Sunday, the 6th inst., at his home, East Burnham Park, Slough. Sir Harry may be regarded as the most outstanding figure in contemporary horticulture, and during the last fifty years no one has exercised so great an influence on all things pertaining to gardening. Like many notable gardeners, he was of Scottish descent; towards the close of the eighteenth century his great grandfather crossed the border to take up the offices of steward and bailiff to Sir Thomas Acland at Killerton, Devon. Devonshire occupies a large place in the history of the Veitch family, for the original settler of the family in this country established a fruit-tree nursery at Budlake in 1808, and founded later at Mount Radford, Exeter, the nursery which is still owned by a branch of the Veitch family under the title of R. Veitch and Son. Under his son James the business was very successful, and even more so under Sir Harry Veitch's father, the famous James Veitch, one of the foremost horticulturists of his day. Sir Harry was the second of his three sons and was born at Exeter on June 29, 1840. His interest in his native town never faded and so recently as 1921 he offered to the City of Exeter a selection of the valuable paintings from the gallery in his London residence at Redcliffe Gardens, South Kensington. The establishment of James Veitch and Sons, Chelsea, was founded in 1853; it was not a new business, being formerly owned by Messrs. Knight and Perry. Sir Harry was at this time completing his education, which was commenced at the Grammar School of Exeter, continued at Altona, near Hamburg, and completed in Paris, where he was engaged with the horticultural firm of Messrs. Vilmorin-Andrieux and Co. He joined his father's business when he was eighteen years of age and was associated with the firm during the long period when it enjoyed the reputation of being the foremost nursery business in the land. In its early days, when new plants were in great demand, the firm sent travellers to collect new plants in different parts of the world, and to them we owe the introduction of many of the finest Orchids in cultivation. The breeding of Orchids was also attempted, and the honour of raising the first hybrid Orchid, Calanthe Dominii, belongs to the firm of Messrs. J. Veitch and Sons. Amongst the very many plants introduced to cultivation by the Veitchian firm, the most popular is probably Ampelopsis Veitchii, The Virginian Creeper, and to them we also owe the introduction of Berberis Darwinii, Cryptomeria Lobbii, Lapageria rosea, Lilium giganteum, Medinilla magnifica, Thuya gigantea, Vanda coerulea and Wellingtonia gigantea, these being only a few, the full list of which is published in *Hortus Veitchii*, published by the firm in 1906. It is to the initiative of Messrs. J. Veitch and Sons that we owe the introduction of so many beautiful new plants from the Orient, for Mr. E. H. Wilson, who was sent out by the firm in 1899 and subsequently on two other expeditions, may be said to be the pioneer of the modern band of plant collectors in Asia. Wilson's introductions are so recent that there is no need for us to refer to them in detail; we all know how greatly this collector has enriched our gardens with beautiful new plants. Equally important was the work of hybridising carried on by Messrs. J. Veitch and Sons. As stated above, they were the pioneers of Orchid hybridising, and in addition to Orchids we are indebted to them for many beautiful hybrid Begonias, Nepenthes, Streptocarpuses, greenhouse Rhododendrons, Hippeastrums, and a host of other subjects. Their successes with the raising of new fruits and vegetables was equally noteworthy; indeed, it may be said that everything they undertook was crowned with success. Sir Harry's influence in the business extended almost over the whole of his long and useful life, and when, after a period of retirement, he was called upon again to assume the reins of responsibility, his energy, enthusiasm, and keenness in business surprised even those who knew him most intimately. In 1914 Sir Harry definitely retired from business, and as there was no successor in the family, rather than risk losing the recognised pre-eminent reputation which the firm had acquired he decided not to sell the goodwill, but disposed of the nursery and the land for building purposes. How great an influence he had in horticultural affairs during the past fifty years or more may be gathered from the fact that he was a member of the Committee of the International Horticultural Exhibition and Botanical Congress held in London, May 22 to May 31, 1866, and we have before us a portrait of the Executive Committee, which includes both Sir Harry Veitch and his father, Mr. James Veitch. It will be remembered that from the profits of the International Exhibition of 1866, the Lindley Library was purchased and vested in the Royal Horticultural Society. With this latter body, Sir Harry was for long honourably and intimately associated, and with others he may be said to have laid the foundation of its present prosperity. For long he served as a member of the Council, and the esteem in which he was held by the Fellows and gardeners generally was shown in the presentation to him in 1910 of his portrait by Sir H. Rivière, which hangs in the Council Room, a replica at the same time being presented to his wife. At the second great International Horticultural Exhibition, in 1912, Sir Harry again took a leading part, and when it became known that his Majesty, King George, had conferred upon him a knighthood in honour of the occasion, gardeners everywhere felt that no more worthy representative of the profession could have been chosen for the honour. He also received the Order of the Crown from the King of the Belgians, the French Legion of Honour, the French Isidore St. Hilaire Medal, and the United States's George R. White Gold Medal for eminent services to horticulture. But probably the greatest honour, apart from his knighthood, was the award of the Victoria Medal of Honour by the Royal Horticultural Society with which he had been so long associated, and of whose Orchid Committee he was chairman for many years. In 1918 the very onerous office of Treasurer of the Royal Horticultural Society was undertaken by Sir Harry Veitch at an age when most men would have been unequal to such exacting duties. After the death of Lady Veitch in 1921, Sir Harry passed gradually from the busy scenes of horticultural activity, but although he lived in retirement at his home at Kensington and at East Burnham, he still took the keenest interest in the very many institutions and affairs with which he had been so long associated. For nearly a quarter of a century he was chairman of the Gardeners' Royal Benevolent Institution and that Fund owes a large debt to him, both for his able conduct of its affairs and for his generosity to its funds. He was also a valued supporter of the Royal Gardeners' Orphan Fund, and he gave his patronage to the United Horticultural Benefit and Provident Society. He was also Treasurer and Chairman of the Horticultural Club for a great number of years. In addition, he was a member of the Board of Directors of the British Orphan Schools and a member of the Committee of St. Anne's and of the City of London Missions. His fine character was reflected in his association with works of a religious and philanthrophic nature, and to these he not only gave his patronage, but also liberal financial assistance. Sir Harry was worthy of all the honours he received; as a business man he enjoyed the esteem and regard of the horticultural trade in every land and was beloved by all who served under him; as a private gentleman his example has been an inspiration to many; his benefactions have been devoted largely to those unable to help themselves, and the world is altogether poorer by his decease.

Report of the Hardy Fruit Crops.—Following our usual practice we hope to publish early in August statistical tables showing the condition of the hardy fruit crops in the United Kingdom. Some of those who have previously contributed to our report may have changed their addresses and we shall be pleased if these and any other readers especialy concerned in fruit growing will make immediate application to the Editors for one of the forms.

The Clay Challenge Cup.—On the occasion of the fortnightly meeting of the Royal Horticultural Society at Vincent Square on the 8th inst., the Clay Challenge Cup was competed for. This Cup is offered annually by Messrs. Clay and Sons for the best Rose not already in commerce, of good form, and possessing the true old-Rose scent. There were in all twenty-one varieties entered for the competition, and the judges' task in selecting their choice must have been a most difficult one. The honour fell to the variety Bedford Crimson, shown by Messrs. Laxton Bros., Bedford. It is a cross between Richmond and Château de Clos Vougeot and possesses a very alluring fragrance. It is claimed to be a perpetual flowerer, and the colour is a very bright, velvety crimson. The form of the bloom is exceptionally good, and the flowers are carried on stiff, erect stems. There were one or two other varieties with exceptional perfume, but unfortunately their poorness of form prevented their being selected. One, however, William Bowyer, shown by Messrs. Chaplin Bros., a flower very similar both in colour and form to the one chosen, also possessed a very sweet perfume.

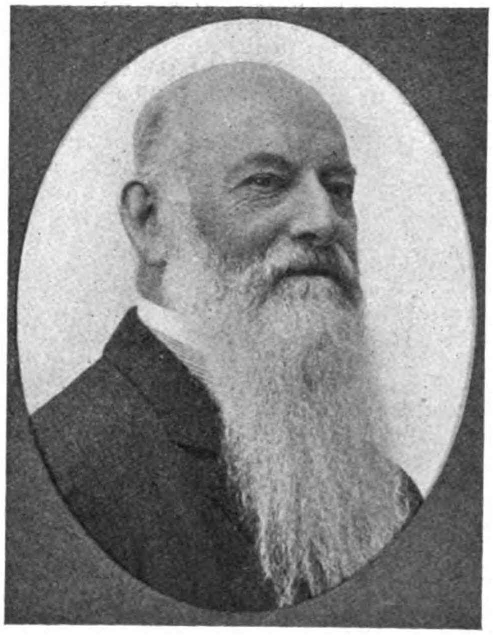
Davenham Gardens, Malvern.—By the kind permission of Dyson Perrins, Esq., the beautiful grounds of Davenham, Malvern, were thrown open to the public for the benefit of the funds of the Worcester Auxiliary of the Royal Gardeners' Benevolent Institution on Thursday, June 26. Over six hundred people passed through the grounds and the visitors were especially interested in the Rose garden, then at its best, with thousands of blooms fully open. The glass-houses with their collection of flowering plants and the fruit houses with fine crops of Grapes, Peaches, Figs and Melons, all proved extremely interesting and attractive, while the rock garden arrested the attention of a large number of visitors.

An Educational Garden.—The Educational Garden and Museum of Economic Botany at "Westfield," Reading, will be open to visitors free of charge on Wednesday, Saturday and Sunday, July 16, 19 and 20, between the hours of 3 and 6 p.m. A special feature of this garden is the cultivation and grouping together of plants used in the preparation of medicines, foods, fibres and dyes. Exotic plants are arranged in a series of conservatories. In an adjacent Museum of Economic Botany are exhibited industrial products derived from the various plants, the habit of visualisation of the plant and its product being thus encouraged. Refreshments will be provided for visitors from a distance.

Appointments.—Captain N. G. Ball, M.A., Assistant to the Professor of Botany, Trinity College, Dublin, has been appointed by the Secretary of State for the Colonies, Professor of Botany and Director of Biological Laboratories, University College, Ceylon. Lieut. A. J. Wakefield, B.Sc., has been appointed by the Secretary of State for the Colonies District Agricultural Officer, Tanganyika Territory.

Royal Society of Arts—The sum of £43,000 has been raised for the purpose of purchasing and renovating the Society's house in St. John Street, Adelphi. The sum required is £50,000, so that £7,000 is still needed. The Albert medal of the Society for the current year has been awarded to His Royal Highness the Prince of Wales, K.G., "in recognition of services rendered to Arts, manufactures and commerce, as President of the British Empire Exhibition, and by his visits to the Dominions and Colonies."

"Botanical Magazine."—Part 3 of Vol. CXLIX of the *Botanical Magazine* contains illustrations and descriptions of thirteen plants. Rhododendron calostrotum, T. 9001, is a dwarf Burmese species which was described by Mr. Reginald Farrer in *Gard. Chron.*, December 6, 1919, p. 289, who was not aware that it had been discovered five years earlier by Mr. F. Kingdon Ward. Both these collectors give high praise to the plant, which grows only a few inches high and bears large pink flowers with a flush of purple that increases with age, the blossoms developing generally in pairs. Boykinia tellimoides, T. 9002, is a perennial herb, native of Japan. It is a member of the Saxifragaceae, and although very rare in cultivation it is recommended as a good garden plant on account of its handsome foliage and racemes of quaintly-formed flowers of a yellowish colour. Veronica canescens, T. 9003a, is a dwarf, New Zealand species, forming loosely matted tufts of wiry, thread-like, hairy stems on which develop, in the axils of the leaves, single pale blue flowers with darker veins. It is said to be one of the smallest flowering plants of New Zealand. Cassiope selaginoides forma nana, T. 9003b, is another very dwarf plant, not more than an inch high, bearing relatively large, globose, whitish flowers. It is said to be hardy and suitable for planting in a rock garden in peaty soil. Magnolia Wilsonii, T. 9004, was referred to by Wilson in *Gard. Chron.*, April 14, 1906, p. 234, as M. globosa, and it has also been described as a variety of M. parviflora, but has since been raised to specific rank. The flowers are white and set off by whorls of crimson stamens and the whitish or yellowish cone of pistils. The seeds and seed capsules also are very handsome. Pentas coccinea T. 9005, is a showy member of the Rubiaceae, an undershrub, softly hairy in all its green parts. The brilliant crimson flowers are developed in umbel-like corymbs, and the plant gives promise of being a suitable subject for cultivating in the warm greenhouse. Lysionotus pauciflorus, T. 9006, is a glabrous undershrub growing on rocks or trees, with long, creeping rhizomes and ascending stems. The flowers are developed in one to three-flowered cymes on slender peduncles. They are white, suffused with violet or purple, and marked with longitudinal streaks of violet. Judging by the plate the plant is very attractive when in bloom. It is not hardy in this country but is said to be suitable for cultivating in greenhouses in pans or hanging baskets. Spencera ramalana, T. 9007, is a Rosaceous plant with inflorescence somewhat resembling that of a Lysimachia. The petals are golden or reddish-yellow. The species is said to grow with great vigour in the Edinburgh Botanic Garden, where plants form a colony in the rock garden in a rather dry, sunny position. Photinia Davidiana, T. 9008, is a fragrant shrub or small tree bearing corymbs of white flowers that are followed by brilliant crimson fruits. Photinia Davidiana grows well in Lord Headfort's garden at Kells, Co. Meath, in a small clearing in an open wood under perfectly congenial conditions. Chamaebuxus Vayredae, T. 9009, is an interesting little alpine with flowers springing from the leaf-axils either singly, or in small, very short racemes of two or three. The outer sepals are often purplish and the inner sepals or wings of a bright rose purple. This species is said to have been discovered more than a hundred years ago and is a native of Spain in the district of Olot. It was apparently lost to notice until 1877. It is said to form a good carpet and blooms freely in the rock garden, flowering late in May. Pimelea prostrata, T. 9010, is a New Zealand shrub with somewhat inconspicuous white flowers. It is interesting as being the only Pimelea which, so far, has been grown in the open at Kew. Dendrobium laevifolium, T. 9011, is an epiphyte bearing bright carmine flowers on short, bracteate shoots, rising laterally from the shorter pseudo-bulbs. The plant is in cultivation in Sir Jeremiah Colman's collection at Gatton Park, where it thrives and flowers freely.



THE LATE SIR HARRY J. VEITCH, V.M.H.

Imports of Grain.—According to the *Agricultural Market Report* issued by the Ministry of Agriculture for the week ending Friday, June 20, imports of the principal kinds of grain, with the exception of Barley, which remains about the same, show a very considerable increase on the month. Consignments of Wheat were nearly double those of May and more than double those of a year ago. Argentina sent 203,000 tons against 103,000 tons of the previous month, Canada 171,000 tons against 78,000 tons, the United States 177,000 tons against 103,000 tons and Australia 64,000 tons against 42,000 tons. Receipts of Wheat meal and flour amounted to 71,000 tons, an increase of 39,000 tons on the month. Arrivals from the United States increased by 5,000 tons to 12,500 tons, from Australia by 16,000 tons to 21,000 tons and from Canada by 17,000 tons to 34,000 tons. Imports of Barley were nearly 50 per cent. greater than a year ago, but about the same as the preceding month, as although arrivals from the United States were 8,000 tons lower on the month there was an increase of 7,000 tons in arrivals from Chile. Imports of Oats increased by 27,000 tons on the month, Canada sending 25,000 tons against 10,000 tons and Argentina 22,000 tons compared with 13,000 tons. Receipts of Maize were about 40 per cent. greater than a year ago and nearly 60 per cent. greater on the month. As compared with May last Roumania sent 18,000 tons against 6,000 tons and Argentina 33,000 tons against 16,000 tons. The total of all kinds of grain and flour imported during the first five months of the current year is 3,695,000 tons, which compares with 3,511,000 tons in 1923 and 3,578,000 tons in 1922.

York Gala.—The total receipts for the Yorkshire Gala were very considerably below those of the past few years. The attendance on the three days, June 18, 19 and 20, was 21,989, the number present on the third day being only 3,606. The total takings for the three days amounted to £1,973 0s. 11½d.; the takings on the third day were £62 6s. 11d. below those of last year. The record year was 1899 when 57,383 persons visited the show, and more than 50,000 were present on nine other occasions, so that the total attendance of 21,989 this year is much below the average and the second lowest in the history of the Society, being a few thousand more than in 1902, when the lowest number, 19,408, visited the Gala. The attendance compared with 1923 fell by about twelve thousand. The weather on the first and second days was summer-like and altogether enjoyable, but on the third day rain fell at 6 p.m., and the outburst was so sudden that everyone in the open was drenched before they could find shelter. This was unfortunate in view of the fact that thousands of children were in the grounds, and many young people were also entering the show for an evening's enjoyment.

Appointment.—The Essex County Council has appointed Mr. D. B. J. Wallace, County Agricultural Organiser for Devon, as Principal of the East Anglian Institute of Agriculture, Chelmsford.

Retirement of Mr. T. A. Glover.—Owing to ill-health, Mr. T. A. Glover has recently retired from the post of Gardener and Bailiff at Woodcote House, Epsom. He had been employed by the Nortney family during two periods for thirty-five years. His first service began in 1871.

Appointments for the Ensuing Week.—Monday, July 14: Bath Gardeners' Society's meeting; United Horticultural Benefit and Provident Society's meeting. Tuesday, July 15: Roundhay (Leeds) Horticultural Society's show (2 days. Wednesday, July 16: Sussex County Agricultural Society's show at Eastbourne (2 days). Friday, July 18: Eastbourne Horticultural Society's meeting. Saturday, July 19: Elstree and District Horticultural Society's show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Horticultural Advance.*—It has become as rare to find ill-grown plants in the exhibitions at Chiswick as it once was to find them well grown. Things of which a head-gardener would have been proud some twenty years ago, his apprentice would be ashamed of now. This alteration must be admitted to be of immense gain; it proves that although progress may in some particulars be arrested, it is upon the whole in vigorous and rapid march. Nor can it now fall back. In the onward flow of the arts of civilisation there is no ebb; there may be eddies, and rapids, and bars, and shallows, and gales may for a moment force back the advancing flood, but such obstacles are soon overcome, and the mighty stream glides on with a force that accumulates as the volume augments. Against the return of gardening to its former state we have this security, that the taste of the public has kept pace with the improvement of the profession. The employers of gardeners have become fastidious; what they would have admired in 1800, and endured in 1820, they now scout. A striking proof of this was afforded on Saturday, by the remarks of the visitors who chanced to spy some unhappy Grapes which an innocent country gardener had produced as a sample of his skill. The Grapes were not so bad; we have seen far worse gain prizes; but the lookers on refused to endure them because they have become accustomed to what is infinitely better. Visitors to these exhibitions come not only from every quarter of the globe, but from every hundred in England, perhaps from every village; they see what gardeners can do; they hear that the best results are often obtained by men with no better means than their own; and they return to their homes determined that there also really good gardening shall be introduced. That is the security against the art of horticulture falling back to its ancient level. *Gard. Chron. July* 14, 1849.

ALPINE GARDEN.

CAMPANULA NITIDA.

Under the heading "Alpine Garden" in your issue of June 21, p. 376, Mr. Arnott refers to the curious little Campanula, which often bears the above name in horticultural lists and exhibitions. He inclines to doubt the accuracy of Mr. Wolley Dod's record that C. nitida was raised from seed of C. persicifolia. Nevertheless that account of its origin, though perhaps surprising, is perfectly correct.

Work on the genetics of C. persicifolia and its allies has been in progress at the John Innes Institution for many years and the fact is well established that C. nitida is nothing but a Mendelian recessive of C. persicifolia. It is a most remarkable and interesting dwarf variety. It grows about six to eight inches high and has, as Mr. Arnott states, glossy, hard leaves of an extraordinarily dark green which strikingly show off the flowers. The corolla is always flattish, and may be single or double, and of any colour known in ordinary C. persicifolia.

Dwarf varieties commonly have dark green foliage but the most peculiar feature of C. nitida is the structure of the flowers. In normal Campanulas the ovary is, of course, inferior, and as it swells, the sepals form an apical ring. In C. nitida the ovary, as it swells rises in the centre of the flower, above the level of the sepals, and appears to be superior. Morphologically no doubt this appearance is spurious, but to an experienced botanist it would be disconcerting.

The variety nitida, like persicifolia itself, is quite self-sterile, but the dwarfs fertilised with pollen from each other breed perfectly true in their essential characteristics. *W. Bateson, The John Innes Horticultural Institution, Merton.*

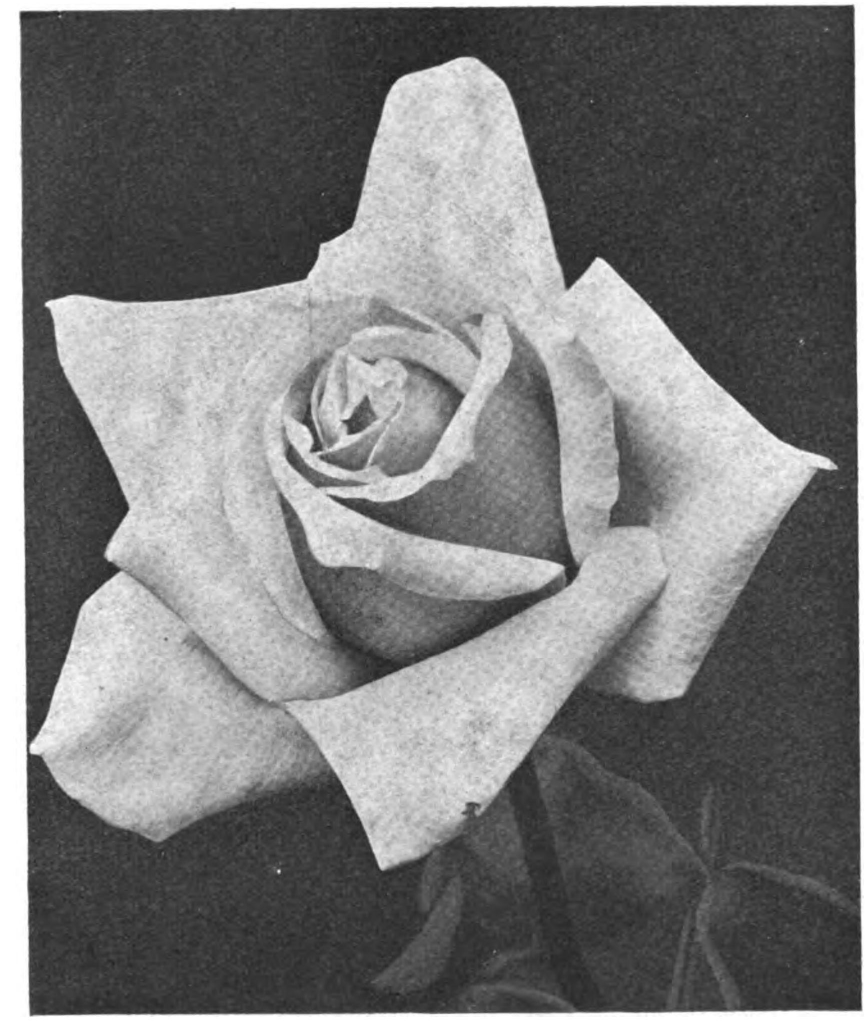


FIG 7.—ROSE MABEL TURNER.

National Rose Society's Certificate of Merit, June 27 (see p. 15)

DIANTHUS LERESCHEI.

In examining the many beautiful plants in the rock garden of Mrs. Robinson-Douglas of Orchardton, Castle Douglas, I observed a fine group of Dianthus Lereschei, a plant seen but seldom in gardens. It is an attractive little Dianthus with pleasing foliage and fair-sized, rose-coloured flowers, reminding one in their general character of those of D. alpinus, but rather smaller and standing an inch or two above the foliage on sturdy, though not ungainly, stems which hold them well erect. The whole plant is not more than two or three inches high.

D. Lereschei belongs to a set of Alpine Pinks which are now frequently grouped under the specific name of alpestre, but this form is a well recognised one. The flowers are deeply notched but not so much so as to interfere with the effect of the bloom, as is the case with some deeply toothed or notched flowers. It evidently grows well on rockwork, on a level or nearly level spot, in a mixture of loam, sand and leaf-mould, with a slight surfacing of gravel. It appears to like sun and should increase freely by cuttings. *S. Arnott.*

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Vanda teres.—This very beautiful Orchid blooms freely at this time of the year. As the plants pass out of flower their growing season commences, the roots becoming active, and that is the best time to re-pot or re-surface them. The plants grow well on long, upright Teak-wood rafts placed in rather deep pans, with clean crocks around the base and with two or three inches of chopped Sphagnum Moss on the surface. The plants will soon attach themselves to the wood, as they produce aerial roots very freely. This Vanda needs plenty of heat and moisture, and should be syringed overhead on frequent occasions during the growing season. When growth is completed it should be placed in the Cattleya house and kept on the dry side at the roots.

Thunias.—These very attractive plants are in bloom, the fresh green foliage setting off the fine arching spikes to excellent advantage. The flowers will last for some time in good condition if the plants are placed in a house having an intermediate temperature and shaded from the sun's rays. As the plants pass out of flower they should be removed to a cool, well ventilated greenhouse, where the temperature does not fall below 55° and be exposed to uninterrupted sunshine; by this treatment they will consolidate their growths. In these conditions the plants are liable to attacks of red-spider, which may be kept in check by placing the plants on their sides at intervals and syringing them with warm, soft soapy-water mixed with XL All insecticide, allowing a sufficient time for the leaves to become dry before syringing the plants again with clear water. They should still be afforded moisture at the roots each time the soil becomes dry, and so long as the leaves remain green, but when the latter commence to change colour moisture should be gradually withheld. Plants that have failed to produce flowers, and with stems of an unreasonable length, should have the points of the shoots pulled out and be otherwise subjected to the same treatment as those that have bloomed. If it is desired to increase the stock, these Orchids may be readily propagated during the present month by taking off the old back stems nearly down to the base, cutting to the points in lengths of about four inches and inserting them as cuttings in small, well-drained pots, filled with a mixture of chopped Sphagnum Moss and silver sand. If the cuttings are placed in a frame in a warm house they will soon develop roots and top growths, when they may be potted singly in a rich compost. When growth is completed the plants should be rested in a similar manner to the older specimens.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Delphiniums.—These plants are frequently expected to yield a second crop of flower-spikes, and for this purpose the early inflorescences, should be removed as soon as they are past their best to induce the plants to throw their energy into new growths. It must be borne in mind that this intensive method of cultivation is exhausting, and the plants should receive liberal treatment and copious supplies of water in dry weather to enable them to maintain their vigour. Seedling plants withstand this treatment better than older ones, moreover, the raising of these plants from seeds is so easily effected that replenishments give rise to no difficulties. Where it is desired to increase the stock of named varieties, the finished flowering stems may be utilised for propagating purposes at this season in the following way. Loosen the soil around the stool and sever the outside stems at their point of junction with the rootstock. Several dormant buds and a cluster of young roots will be found near the base of the stems, and if the stems are shortened to about six inches, potted into suitable sized pots and watered carefully, they will soon start into active growth and make strong plants. It is wise to replant them in their permanent quarters before they become pot-bound.

Sweet Peas.—Keep the trenches free from weeds and water the plants copiously as often as necessary. Seed-pods develop quickly at this season, and the rows or clumps should be gone over regularly for the removal of faded flowers. If liquid manure from the cowsheds can be obtained, fortnightly waterings with this stimulant during the next two months will greatly help the plants to maintain their vigour, but it is always safer to water heavily with clear water on the day preceding its application. Failing this, sprinkle a moderate dressing of some approved fertiliser along each side of the row before watering.

Herbaceous Borders.—Unless care is taken, herbaceous borders are apt to become untidy as soon as the earlier flowering subjects are over. Many of our most beautiful plants produce a display over a comparatively short season, but where these are grown in small groupings most of the gaps caused by the passing of early-flowering plants may be concealed by judiciously tying out-growths from neighbouring groups. If faded flowers are removed immediately and the borders receive a mulch of short manure the flowering period of mid-season plants will be considerably prolonged.

HARDY FRUIT GARDEN.

By R. W. THATCHER, Gardener to MARK FIRTH, Esq., Carlton Park, Market Harborough, Leicestershire.

Strawberries.—Attention should be given to propagating the layers to provide young plants for a new bed. Where there is room it is best to grow a small batch, solely for propagating purposes, not allowing them to fruit. This is especially desirable if the plants are needed for forcing. Only the very best and strongest runners should be layered for this purpose, and they are best grown in three-inch pots in a compost of two parts loam to one part leaf-mould that has been passed through a half-inch sieve. Reserve the best runners for potting, and secure also sufficient for planting out at the same time. The first plant on the runner is always the best, and those that develop beyond this should be cut off. As each plant is layered and fastened with a wire or wooden peg, the pot should be plunged half way in the soil of the bed, making the necessary hole with a trowel. This will keep roots cool, and they will not need so much watering. The plants should, however, be damped over every afternoon if the weather is warm to ward off attacks of red spider. Stand the plants in alternate rows so that the intervening row is free to walk down to give them the necessary attention. Strong, healthy plants should result from this treatment, and any runners not required may be cut off the parent plants.

Feeding Fruit Trees.—This is a somewhat expensive item in these days if carried out to any extent on outdoor fruit trees unless one has plenty of farmyard manure water at hand. There is nothing better than this stimulant if it can be obtained; it should be well diluted with water and the trees watered with it when the ground is not very dry. If necessary give the soil a soaking with clear water one day and apply the manure water the next. Young, vigorous trees that have been mulched will not require feeding to the same extent as older ones, or they will make too much gross wood. If they have been planted in good soil and kept moist by applications of clear water, they will mature their crops quite well. A little bone meal and soot forked in the surface of the ground around the trees will assist in the colouring of the fruits, and will not unduly excite growth, but quick-acting manures should not be used except on special occasions and by experienced hands.

Watering.—Newly-planted trees will suffer if they become dry at the roots, therefore, water them if it is necessary, giving the soil a thorough soaking. Afterwards apply a mulch of well-rotted manure. In the case of wall trees, thoroughly drench the wall as well; as it will refresh the trees and moisten the roots growing close thereto.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Richardia œthiopica.—The plants intended for flowering next winter, from Christmas onwards, should be potted before the end of the present month. Though this is a water loving plant a period of rest is essential to get the best results when it is grown in pots. After flowering the supply of water should be gradually diminished, and for a few weeks during early summer, the plants, in their old pots, should occupy a position outside, at the foot of a south wall if possible, where they will get a sun-baking, and during this time only sufficient water should be afforded to prevent the crowns from shrivelling. Richardias require a rich rooting medium. A compost of three parts strong, turfy loam to one part of well-decomposed cow-manure, or a larger proportion of old hot-bed manure, with some broken charcoal and sharp sand added, will suit them. As copious supplies of water will be required during the growing season, the pots will require to be well drained. The plants should be shaken out of their old pots and the strongest and second strongest only should be selected for next winter's flowering. It will be well to pot some of the strongest plants singly in eight-inch or nine-inch pots, whilst three of the smaller-sized crowns may be placed in a nine-inch or a ten-inch receptacle. After potting the plants should again be placed in a sunny position, outside, where they may remain until housing time, which should be during October, unless sharp frost sets in before that time.

Violets.—The plants intended for frame culture and now growing in outside borders will need careful attention during hot weather to prevent attacks of red spider. Use the Dutch hoe between the rows once or twice weekly. If dry weather continues it will be well to give the plants a thorough watering, afterwards mulching them with an inch or so of sifted, old hot-bed or Mushroom-bed manure. Syringe the plants overhead with clear, soft water during late afternoon or in the evenings of hot days.

FRUITS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Scalding in Grapes.—There are certain varieties of Grapes that are more susceptible to scalding than others, and it is generally those that are grown in the later vineries. The trouble is sometimes caused through lack of moisture at the roots during the stoning of the berries; when insufficient water is given at this stage the skin is very apt to become hard and does not expand when the berries commence their second swelling. Another cause is a rapid rise in the temperature during the early morning before the vineries are ventilated to permit of the escape of condensed moisture. It is always advisable to maintain a little warmth in the water pipes at this stage, so that ventilation may be given night and day. Should the attack of scalding be severe it will be wise to shade the vines lightly, but the shading material should be removed when the danger is passed. Do not withhold water at the roots when the scalding of the berries is noticeable; the border should be watered when plenty of fresh air is admitted to the house.

Pot Fruit Trees.—Where Pears, Apples, Cherries, and Plums are grown in cold orchard houses and the trees are somewhat crowded, they may with advantage be placed outside in a sunny, sheltered position. Place them out-of-doors if possible when the weather is inclined to be somwhat cloudy, or the sudden change of removal during hot, dry, bright weather may cause the foliage to burn, and especially if the trees are allowed to suffer through lack of moisture at the roots during the first few days. Injury to the foliage in this way must be obviated or the present crop will suffer and it will also injure the trees for next season's crop. The pots should be plunged about half way in the ground to prevent them being blown over. After the trees are placed in position outside they may be top-dressed with decayed manure to prevent the roots drying out quickly during hot, sunny days. Trees that are bearing freely may be watered alternately with weak liquid manure, or they may be given a quick-acting fertiliser. Syringing the trees with rain water in the evening will be very beneficial to them. Attend to the pinching of sub-laterals, which may be taken out at the second or third leaf. Support the branches of Apples and Pears with neat stakes, as they are easily broken by the weight of the fruit.

THE KITCHEN GARDEN.

By WALTER Y. STAWARD, Gardener to Mrs. JOHN FERNEY
The Moat, Berkswell, Warwickshire.

Spring Broccoli.—Seedling Broccolis are ready for planting in their permanent quarters. The ground for this crop should have been well tilled and contain a fair amount of short, rotted manure. Prepare the soil in readiness for planting, which may be done at the first opportunity after rain. Arrange the varieties in rotation according to their season; then, when they are ready for cutting, the ground may be cleared and prepared for the crop that will follow.

Curled Greens.—For spring use Kales and Sprouting Kale may still be planted on vacant ground where early Potatos have been lifted. The latter crop needs plenty of room both between the rows and the plants in the lines.

Potatos.—Continue the cultivation of the ground between the rows of Potatos, earthing up as it becomes necessary. Fine crops will be obtained by stirring the ground frequently between the plants before earthing them up. So soon as early Potatos are lifted crop the ground with Dwarf French Beans or early Cabbages.

Aubergines.—The plants are ready for transference to larger pots. Over the drainage material place a quantity of decayed manure and fill the pots with a mixture of a half good loam, one quarter leaf-mould and one quarter sand. Pot fairly firmly. Syringe the plants over-head in the evenings. A cool frame will suit Aubergines which should be slightly shaded from the sun's rays.

Autumn Broccoli.—So soon as the plants are large enough to handle they should be set out. Veitch's Autumn Giant is a reliable variety; the ground for Broccoli should contain plenty of manure.

HARDY FLOWER BORDER.

TROLLIUS.

THE genus Trollius includes some of the most showy border perennials at the present time, the bright yellow and orange coloured globe-like flowers, with their pretty reddish or orange anthers, being very handsome.

It is, however, in the bog garden or in the margins of a stream, by Water-Lily ponds on partially shaded situations, in which they excel, as their roots need ample moisture.

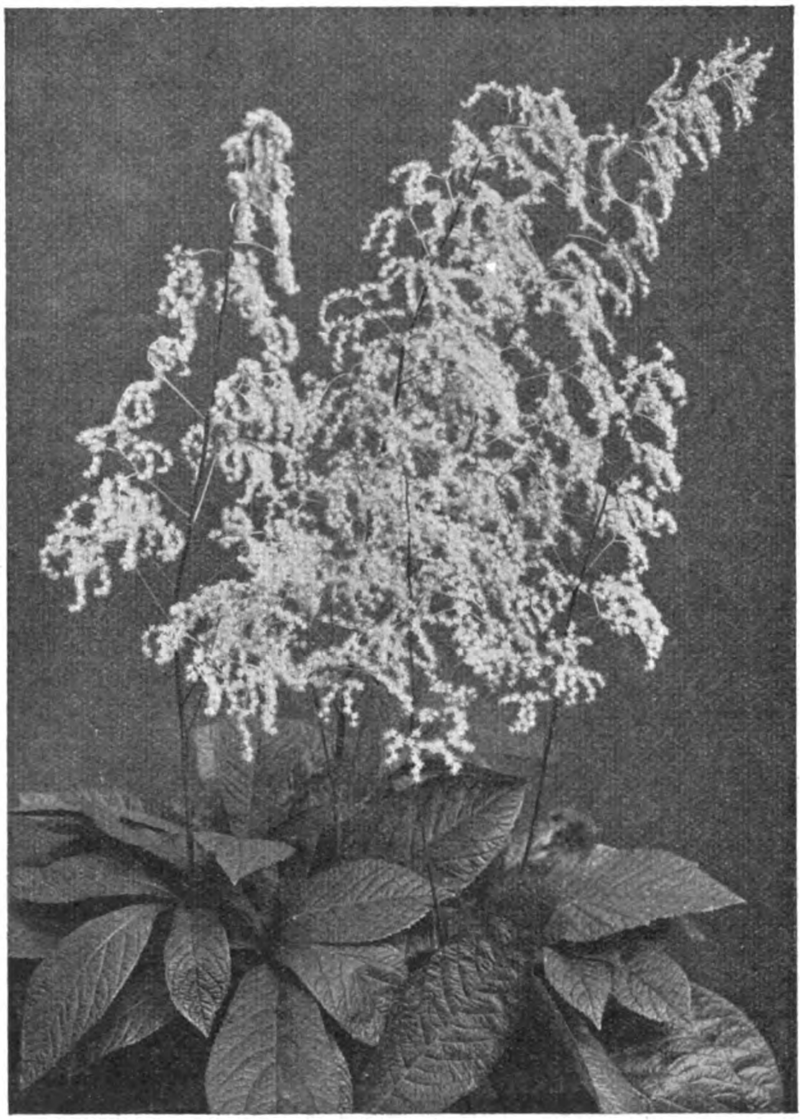


FIG. 8.—RODGERSIA PURDOMII.

In the orange and scarlet shades some of the best varieties are Asiaticus, Orange Globe, Excelsior, Fire Globe and Fortunei plenus, whilst the yellows include Canary Bird, europaeus superbus, Gold Queen, Newry Giant and giganteus. All the varieties may be propagated by division.

RODGERSIA PURDOMII.

THIS very stately Rodgersia (Fig 8), exhibited at a recent meeting of the Royal Horticultural Society by Mr. J. C. Allgrove, was introduced into this country by Mr. Purdom who collected it in China. The creamy-white flowers are borne in large, feathery panicles and this Rodgersia may be well recommended as a garden plant, which grows best in a somewhat moist, peaty soil.

PHLOX ARENDSII.

THIS is a comparatively new race of hardy hybrid Phlox, the result of crossing Phlox canadensis with the showy varieties of Phlox decussata, and possessing the vigorous habit of the one parent and the profuse blooming qualities of the other.

At the time of writing I have some magnificent two-year-old clumps of the variety Louise flowering vigorously; the blooms are pale lilac with a carmine eye. The plant branches freely and is very effective. Charlotte is somewhat similar with a decided shade of pink and a prominent dark eye. Crete is of free branching habit, and produces masses of pink buds, which when open are white. Kathe has numerous loosely-branched stems, well furnished with purplish-pink or rose flowers, with a dark eye. Elizabeth is a very pretty sort having pure white flowers when fully expanded, the buds being rose tinted. Armanda has a neat, bushy habit and grows about twelve inches high; it produces a profusion of delicate rosy lilac flowers.

All these Phloxes are from fifteen inches to twenty inches high, with the exception of Armanda, and they flower continuously from May to August. *W. L.*

GARDEN NOTES FROM S.W. SCOTLAND.

Among the evils wrought by the winter of 1923–4 none is more to be deplored at midsummer than the absence of blossom on Tricuspidaria lanceolata (I wish some ingenious wight would coin and circulate a good English name for this beautiful exotic). It suffers from the habit of producing its pendant flower-buds in late summer, not intending to open them till the following June. They stand uninjured through hard, dry frost; but they succumb to frost following closely upon wet. Thus, last winter, although the shaded thermometer never registered here more than seven degrees of frost, that temperature occurred twice when vegetation was dripping. Consequently bushes up to fifteen feet high that ought to be aglow at this season, carry only a few carmine bells in sheltered corners.

Lilium columbianum, methinks, is not grown so often as it would be were it better known. "As a maffact" (to borrow a phrase from Mr. E. V. Lucas's *Rose the Second*) I never saw it before a kind friend sent me some bulbs in the autumn of 1922. They made but an indifferent show last summer, as is the manner of several species of Lily after being moved; but this year they have revealed their true character, rising to a height of over forty inches, and bearing liberal racemes of clear golden turncaps flecked with purple, in admirable contrast to the blue-green foliage. I counted nineteen blossoms on one stalk. This Lily seems to be as good-natured as L. Humboldtii—which it resembles—is peevish.

Another June-flowering Lily which exacts admiration from every visitor is L. dauricum luteum, with which I was lucky in being supplied by Mr. R. W. Wallace before he left Colchester. It is of lowly habit, not much more than eighteen inches high, but its great cups are of a soft, luminous yellow that shines afar. I am told that this variety is no longer in the market, which is greatly to be regretted, for it is a plant of singular beauty and has proved here to be a good doer.

Perhaps those who speak and write disparagingly of Lilium pyrenaicum have not grown it as a woodland plant. The contrast in stature alone between those of this species grown in the half shade of trees, and those in the open border is very remarkable. Especially is this the case with the scarlet-flowering variety, which rises to a height of four feet in the wood and becomes a rival in grace and brilliancy to L. pomponium.

We have had some stormy days in the closing week of June, knocking about the flower borders in a very exasperating degree; but they have served to draw attention to the quality of that fine New Zealander, Gaya (Plagianthus) Lyalli as a wind resister. I refer especially to the smooth-leaved variety, whereof the large, bright green leaves on long stalks seem just the kind of foliage most likely to suffer from violent wind. That and the character given to it as a half-hardy shrub, caused us to place the first plant we received against an eight-foot brick wall; but it has far outgrown that protection, and neither that plant nor others growing in the open have suffered the slightest blemish from their recent tossing.

Kniphofia caulescens makes a grand display in midsummer, but plenty of room must be given if it is to have justice, and it deserves liberal treatment to boot. We have two clumps here, each raised from a single root planted many years ago. Each has spread over a space twelve feet in diameter; one is flowering from almost every rosette of glaucous leaves; the other, in a similar position is flowering sparsely; the reason being that the first received a heavy mulch of leaf-mould last autumn, while the other was left to pick up its own living.

Amateurs never weary of chanting the praise of Gentiana Farreri, and well may they do so, for it is an exquisite flower. But woe is me! What a business it is to keep it free from seedling grasses. In no other plant known to me does the foliage so closely resemble lawn grass, not even Dianthus neglectus, whereof I once lost several yards of edging at the hands of a conscientious weeder. It is practically impossible to detect seedling grass among the clumps of Gentian, until the grass is about to flower, and to do so effectively requires almost daily inspection. Mention of Dianthus neglectus suggests it as a meet companion for the Gentian as an edging plant, the latter coming into flower as the former passes out of bloom. It is a misuse of this Dianthus to plant it high on a rockery, for it is an alpine meadow plant and likes plenty of moisture. *Herbert Maxwell, Monreith.*

RHODODENDRONS.

Rhododendrons in Nature.

(*Continued from p. 12*).

The sequence of Rhododendrons in the Htawgaw Hills, North-East Frontier of Burma, is as follows: In the river bed, R. indicum is found growing socially on the rocks. Then, ascending, come species of the 'Maddeni' series—R. megacalyx (often epiphytic), R. sino-Nuttalli and R. dendricola (always epiphytic), and presently larger trees of the 'Irroratum' series—R. facetum, R. ombrochares, and R. Kyawi. The 'Maddenis,' it may be noted, have almost invariably white flowers, sometimes with a tinge of yellow or a flush of pink, and are sweetly fragrant. The 'Irroratums,' invariably, have scarlet, crimson or rose flowers, not scented. R bullatum and R. Edgeworthii, also white flowered, are likewise fragrant and so are the species of the 'Fortunei' series—a thing by no means common in the genus. It would appear to be nature's compensation for denying them pigment; nature is often thus niggardly of her favours—or is it economy of effort?

In the temperate rain forest where mighty trees—Oaks, Magnolias, Michelia, Schima, Bucklandia, and others grow, are scattered trees of R. agapetum, R. sino-grande and species of the 'Stamineum' series such as R. Mackenzianum, and on the cliffs small undershrub species such as R. sino-vaccinioides and R. sino-virgatum. Towards the limit of the temperate rain forest, the species become more social and on the open rock ridges we find large associations of such species as R. bullatum, R. gymnogynum, R. sidereum, and R. crassum—the last named always scattered; with colonies of species belonging to the series 'Triflorum' and 'Heliolepis' (*e.g.*, R. plebeium and R. oporium.

Next, in the Conifer forest at about 9,500–11,000 feet are the social tree species such as R. arizelum ('Falconeri') and R. aemulorum ('Haematodes') with R. Mackenzianum ('Stamineum') and R. tanastylum ('Irroratum') scattered. The two first-named are the only forest-forming species which, unsupported by other species, cover large areas of the mountains. The only epiphytic species found here is the yellow-flowered R. tapeinum often seen growing on Fir trees and sometimes on cliffs.

Before we reach the Rhododendron-Conifer forest, the scrub-forming species begin to appear—species of the 'Sanguineum,' 'Neriiflorum' and 'Haematodes' series. These form dense knee-high tangles amongst the dwarf Bamboo and on the open rocks. R. euchroum, R. phoenicodum, R. herpesticum, R. sperabile and R. aperantum grow here; with thickets of 'Trichocladum' and 'Thomsoni' species—R. lithophilum for the former, perhaps, and R. aiolôsalpinx for the latter. In the high valleys some of these species line the stony streams with Bamboo and Larch for miles and miles, leaning down to the water. Finally, emerging from the forest on to the open alpine slopes, these are found clothed, as already noted, with dwarf species in great variety—R. myrtilloides forming spongy cushions on the rocks; bushlets of pink-flowered R. nwaiense, queer crimson; R. calostrotum, the yellow-flowered, R. charitostreptum; R. repens, prostrate like Ivy or curtaining the rocks with a network of leafy shoots; R. cremnastes; and others—an inextricable confusion of varying and distinct forms, carpets, brooms, brushes, undershrubs, mats, with a chromatic foam of bloom swaying on the surface.

It may easily be imagined what a riot of colour the forests of the N.E. Frontier are in early spring. Later, in May or June, the Alpine species flower till the summer rain hammers them to pulp; after which in October many of them break into flower a second time. From 9,000 feet upwards Rhododendrons are the most striking feature of the vegetation. In the forest and on open, wind-swept ridges, their stout, gnarled trunks, usually dividing low down and throwing aloft a massive crown of branches, are everywhere conspicuous. The copper-red, biscuit, or rufous trunk is dappled with lozenge-shaped scars as the bark chips off; or it is smooth and purple with a curious glassy sheen; or the papery bark flutters in thin strips through which the light shines redly. But whatever the nature of the tree and its bark there is one thing peculiar to these Rhododendrons—rarely are their trunks the abiding place of epiphytes, save when at high altitudes they squirm and writhe in tangled confusion or grow out horizontally from the steep pitch; and then it is little more than a film of Moss and pigmy Fern towards the base. Indeed, in the depths of the rain forest, where the huge trees are so shrouded with epiphytes that it is impossible directly to distinguish one from another, the clean, ruddy limbs of the Rhododendrons at once betray them at all seasons; though in the spring attention is drawn rather to the pools of blood red, purple, pink, or white corollas which litter the ground under the trees.

But the Rhododendron trees themselves, aflame with blossom, standing beneath the canopy of big timber, are in spring seen from the interior without this adventitious aid; or from the open ridge one may look across the valley and pick out one by one, like gems, the Rhododendron trees smothered in blossom.

In foliage they are only less beautiful than when in flower. The great mat green leaves of the forest trees, often with a tawny, russet, or chestnut felt below, or lacquered silver, or white or glabrous, the breaking shoots which outline the trees in silvery-green fire—these things add infinite variety to them. When the wind blows, flicking over the leaves, the trees take on a kalaidescopic appearance of dissolving and re-shaping patterns. It is to be noted that the big trees, with the exception of some of the topmost forest-forming species, all grow in deep shade; even the latter are highly sensitive to climatic conditions, species usually being confined to the sheltered or exposed flank. Most of them grow on steep slopes, either in well-drained soil or in clay from which the surface water rapidly drains off. But not entirely. The clay-growing species—for the igneous and slaty rocks of which the North-East Frontier ranges are formed, decompose at the surface into a stiff clay—have a heavy natural mulch of leaf-mould which holds water like a sponge. The rainfall here is very severe in the summer and more or less persistent at all seasons. There is no long period of drought. A month of fine weather is exceptional; and heavy dews then keep the vegetation sweet and moist.

The bewildering variety of Rhododendrons in the forests of Indo-Malaya is thus apparent. The forty species mentioned above, representing no fewer than twenty-six sections, are but a tithe of those found on the North-East Frontier of Burma; but they do give some idea of their range, variety, and abundance in what is perhaps the most prolific Rhododendron area in the world. This Indo-Malayan association is continued southwards and the species are scattered all along the low ranges of the Malay peninsula, till the lofty ranges of the Indies are reached. Here they again become a dominant feature of the vegetation. Woollaston, writing of New Guinea vegetation, states:[*] "Between 9,000 and 11,000 feet the most conspicuous plants are bushy Vacciniums and Rhododendrons of several species; these plants form a very dense, bushy jungle, always heavily overgrown with Mosses which is always very difficult to traverse . . . very few plants can grow at all; here and there in the less precipitous places a few Rhododendron bushes are found up to about 13,000 feet."

Of Rhododendrons in Sikkim more familiar to people in this country, Sir Joseph Hooker writes: "In order of prevalence the trees were—the scarlet Rhododendron arboreum and R. barbatum as large bushy trees, both loaded with beautiful flowers and luxuriant foliage; R. Falconeri in point of foliage the most superb of all the Himalayan species, with trunks thirty feet high and branches bearing at their ends only leaves eighteen long; these are deep green above and covered beneath with a rich brown down." Of the higher regions he writes: "Evergreen Rhododendrons soon replaced the Firs, growing in inconceivable profusion, especially on the slopes facing the south-east, and with no other shrubs or tree vegetation, but scattered bushes of Rose, Spiraea, dwarf Juniper, stunted Birch, Willow, Honeysuckle, Barberry, and a Mountain Ash (Pyrus). What surprised me more than the prevalence of Rhododendron bushes was the number of species of this genus, easily recognised by the shape of their capsules, the form and woolly covering of the leaves; none were in flower but I reaped a rich harvest of seed. At 12,000 the valley was wild, open and broad, with sloping mountains clothed for 1,000 feet with dark green Rhododendron bushes; the river ran rapidly and was broken into falls here and there. . . . Dwarf Rhododendrons with strongly-scented leaves (R. anthopogon and R. setosum) and abundance of a little Andromeda, exactly like Ling, with woody stems and tufted branches, gave a heathery appearance to the hill sides." *F. Kingdon Ward.*

(*To be continued*).

TRAINING OF YOUNG GARDENERS.

I have been very interested in the correspondence on the subject of young gardeners, and there is no better channel for exposition of thought and facts relating to horticulture than the *Gardeners' Chronicle*. The desire for more instruction by our young men is a good sign that in future years the British gardener does not intend to take second place. Britain is now beginning to feel the beneficial results of compulsory education introduced years ago by far-seeing statesmen, including those two great gardeners Lord Balfour and the late Mr. Joseph Chamberlain. Undoubtedly their keen love of nature inspired them in this matter, and the interest and craving for knowledge by the younger generation to-day is the result of the educational training so necessary to first-class gardening.

The belief that all good gardeners are country bred is erroneous; genuine interest in nature is a natural instinct, more pronounced in some than others and equally conspicuous in dwellers in town and cities as in the country. A man may be an expert in producing robust vegetation but lacking in artistic taste, and *vice versa*, but the man who can combine art and nature is the one who will make most headway.

At one time there was a tendency to copy other countries, and to this may partly be attributed the extravagant taste for grotesque garden structures and the confused variety of fanciful scenes.

It was the Dutch influence that introduced into England an abuse of nature in the clipping of trees and shrubs to resemble the outlines of statues, animals, and even vases and tea cups. Few examples exist of a style of gardening truly representative of natural landscape. Even in the grounds of many noble mansions and palaces uniformity has been followed to an extraordinary degree. Trees shrubs, flower-beds, walks and earth works are disposed in stiff lines and geometrical combinations, stretches of refreshing water have been made to become straight canals, and circular or oblong basins, adorned with artificial fountains and edged with ashlar work, and the grounds generally crowded with ornaments in the form of statues, vases, colustrades and steps.

To the artist all nature is a garden, the delicious contrasts of hill and valley changing imperceptibly into each other, the beauty of the gentle swell, the concave scoop, and picturesque irregularity appeals to him; surely in this there is food for reflection for the student gardener.

A true Englishman is a lover of his garden which should be in accord with his temperaments, sentiments, or occupation, designed to suggest a representation of natural views which will arouse pleasureable associations, pure in style and free from a display of wealth and vulgarity. Ostentatiousness is detrimental to the highest aims of art which should be inspired by a genuine love of nature with the object of enjoying within a narrow compass the varied beauties of natural scenery. It should be arranged that the different seasons may contribute in rotation to the beauty of the scene, so as to form a retreat for hours of leisure and idleness, for secluded ease and meditation, a place to stroll in rather than a resort for the pleasure of society, a place with a character of dignified solitude and complete restfulness. *George Burrows, Superintendent of State Gardens, Patiala, India.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM CRISPUM LADY JANE.

This very remarkable variety is still well represented at Gatton Park where its nearest ally of peloric origin, O. crispum Oakfield Sunrise (see Fig. 9) is also thriving, and attempts are being made to carry on their remarkable features by seeding.

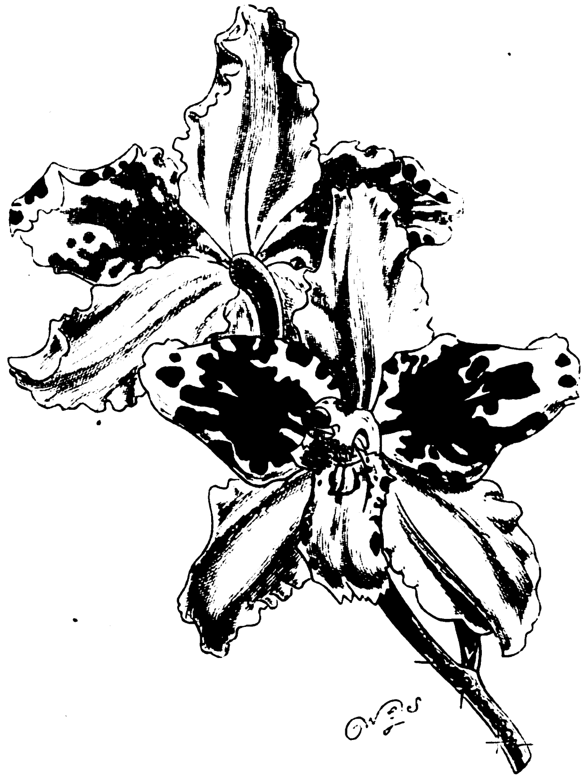


FIG. 9.—ODONTOGLOSSUM CRISPUM OAKFIELD SUNRISE.

The variety Lady Jane has many peculiarities. The whole flower has a fleshy, wax-like texture, the segments tending to reflex on the outer halves. The sepals are white with a slight blush tint. The petals have on the other parts broken lines of brownish-claret colour which, although displayed generally in the same way, varies in the different flowers. The lip has a bright yellow base and the narrow front spottings of the same colour as the markings on the petals.

The variety was first flowered by J. Wilson Potter, Esq., of Elmwood, Croydon, who showed it at the Royal Horticultural Society on July, 1900, when the question was raised as to whether it might not be a temporary variation. But it flowered in subsequent years with all the characters unchanged, and at the Temple show, 1902, when Mr. J. Wilson Potter showed it in fine condition, it was awarded a First Class Certificate. The column, which is spotted with claret-red, and the strong yellow crest on the lip show abnormal variations from typical O. crispum.

---

[*] Himalayan Journals.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Illustrations—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard, 1543.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

GARDEN-CRAFT IN THE CANTICLES.—III.

THE gardens of the Hebrews, like those of other lands, were protected or guarded by hedges of living plants, as well as by walls and fences. Owing to the depredations of wild animals and the incursions of lawless men, plants with strong spikes were much in request, as they are to-day in many foreign parts. Species of Acacia, Caesalpinia, Euphorbia, Opuntia and other similar trees, shrubs and spinous plants were among the number of those which were most frequently employed. Their effectiveness is well set forth in the *Life of Las Casas*, where, writing of the Spaniards being pursued by the Indians, he says that "they had not proceeded more than a league when they saw that there only chance was to take to the shore again and throw themselves into one of the dense beds of Cactus with which that coast abounds. Happily there was time enough for the Spaniards to take refuge among the Cactuses, *pervious only to despair, but otherwise hardly to be penetrated by a fully armed man.* The Indians were naked, and though they made great efforts to get at the Spaniards in this 'Thorn fortress,' they could not do so." Such a fact gives point to the question of Satan respecting Job—"Has not thou set a hedge about him?"

The Cacti, "with their angular, succulent stems, armed with spines," and destitute of leaves, are numerous in the hotter and drier parts of America, and are both weird and singular, being "sometimes globular, sometimes articulated, sometimes rising in tall, polygonal columns, not unlike organ pipes." While at times they attain a gigantic size, at others they are so small they are said to get between the toes of dogs. They are usually greatly dreaded because their scratch is frequently poisonous, and where this is not the case great irritation ensues if the finer prickles get into the flesh. Some of the species, and particularly the Opuntias, readily become naturalised in the East. In the Deccan the form known as the broad-leaved Prickly Pear (O. Dillenii) is generally regarded as a nuisance. "It is nearly, if not quite the same species as that on which the cochineal insect is reared in Teneriffe. The species so common in Southern Italy (O. vulgaris) is to all appearance the same, and there, as in America, the fruit is called the Indian Fig."

The term Prickly Pear, usually applied to this plant, is in some parts of India employed to denote a certain species of Euphorbia (E. neriifolia). This is "an erect, fleshy shrub or small tree with branches jointed, cylindrical or obscurely five-angled; short, sharp thorns as stipules arise from thick tubercles; the leaves are obovate, oblong, fleshy, the involucres yellowish in short-stalked clusters." This, as Nairne states, is one of the shrubs which is too well-known. It is painfully hardy, and is one of the plants of this curious Order which can be used for hedgerows. Another is the so-called Physic Nut (Jatropha glandulifera), a large shrub, but lacking in beauty. Though it is much used in some parts of India for enclosing plots of ground, the hedges are not of the best.

The Eastern garden, as we have learned, was enclosed with a hedge of Thorns. But since Cacti did not grow in some places, and Euphorbias were lacking elsewhere, what other plants were available? In Proverbs (XV. 19), we read that "the way of the sluggard is as a hedge of Thorns." The Hebrew word for Thorns is *Chedek*, which is the equivalent of the Arabic *Chadak*; and this is said to be the name of a plant belonging to the Solaneae (Melongena spinosa). I refer to it chiefly because it illustrates the many difficulties which beset our study. When we speak of Solanum and the Solaneae or Solanaceae (for one has to look up the synonymous terms in old writers), we usually think of the Potato and its allies, and we do not naturally associate with these the idea of thorns and prickles. Our thoughts rather run to the valuable underground tubers or the fruits and berries of the Capsicum, Tomato or Winter Cherry Turning up a German Dictionary of Plant-Names for the obsolete word Melongena, I find it defined as a term for a genus belonging to the Order Solaneae, and the author states it is either a modification of the Arabic word *badingian*—which on the face of it is unlikely—or is derived from the Greek words *Melon*, an Apple, and *genaein*, to produce, on account of the egg-shaped or Apple-like fruits which it yields. Balfour in his *Class-book of Botany* stated, "Some suppose that the Hebrew word Chedek, translated Thorns in Proverbs XV. 19., and Brier in Micah VII. 4., refers to this species (Solanum sanctum), which is called by some Solanum spinosum," but he does not give the synonym Melongena.

We naturally turn to Tristram for help Writing of *Chedek* he states, "Evidently this is not a ground thistle, but some thorny plant suitable for hedges, and we have a clue to it in the Arabic corresponding term *Chadak*, the name applied to prickly plants of the Solanum family, of which there are several species very common in Palestine. One in particular (S. sanctum or S. sodomeum), familiarly but incorrectly designated as the Apple of Sodom, is probably the *Chedek* of Scripture. It grows most abundantly in the warmer parts of the country, especially in the Jordan Valley, in hedges, thickets and wastes, near towns and gardens. It is a shrubby plant, from three to five feet high, with very branching stems, thickly clad with spines like those of the English Brier, with leaves very large and woolly on the underside, and thorny on the midrib. The blossom resembles that of the Potato in shape and colour, and it bears a large crop of fruit, larger than the Potato Apple, perfectly round, yellow at first, and when quite ripe changing to a brilliant red." A coloured plate named Solanum sanctum is given in Mrs. Zeller's *Wild Flowers of the Holy Land*. The term Melongena employed by Haselquist and other old-time writers has now quite fallen into disuse, that of Solanum having taken its place.

If the Indian Fig must be ruled out of our list of plants with which hedges were made in Palestine in the time of the Canticles, and the Solanum was not employed, Palestine still possessed many other forms of Thorns and Briers suitable for the purpose. There are no fewer than eighteen Hebrew words (as Tristram reminds us) in use in the Bible to set forth the different kinds of prickly shrubs and herbs. We read again and again of Thorns, Brambles, Thistles, and Briers, and many of the plants so designated were peculiarly adapted for use in fences and hedgerows. Thus we find the word *Atad* rendered Bramble or Thorn. This is frequently identified with a form of Lycium (L. europaeum), which "is very common in all parts of Palestine, and serves the uses of our Hawthorn, which it somewhat resembles. It is often employed in hedges, and has stiff, sharp spines, erect and numerous branches, with very small oblong thick leaves close set, and less than half the size of the Box Tree." This, like the last, belongs to the Potato family, and its near relative (L. barbarum) is well-known in this country as the Tea plant. In Spain the European form grows commonly in the hedgerows, and the young shoots when blanched are frequently employed as a substitute for Asparagus. The term Rhamnus, which is sometimes used in reference to the foregoing, is better reserved for the different species of Buckthorn, known in Hebrew as *Shamir* and in Arabic as *Samur*, the more general term *Sidra* being used for all thorny trees of considerable size which do not bear fruit.

Among the best known of these in the East is the Christ's Thorn (Paliurus aculeatus), flexible branches of which may be easily intertwined, so that they are effective for hedge-making, as well as for a crown of Thorns There is another Thorn tree, however, whose scientific name (Zizyphus Spina-Christi) alludes to the latter, and many are inclined to give it preference. Its thorns are sharper and more numerous than those of the Buckthorn, and it grows plentifully about Jerusalem, as well as in the Jordan Valley and elsewhere. It is named by the Arabs Nubk, and "there is no fence more impervious," says Tristram, "than that formed of this plant. The Bedawin contrive to form one round their corn plots with trifling labour. They simply cut down a few branches and lay them in line as soon as the Barley is sown. No cattle, goats or camels will attempt to force it, insignificant as it appears, not more than a yard in height, and the twigs and recurved spines become so interwoven that it is in vain to attempt to pull the branches asunder." The Thorns, moreover, often create a festering wound. As this is indigenous and both common and effective, it may be regarded as one of the most typical of hedge Thorns in Palestine.

Reference must also be made to the Butcher's Broom—a species identical with our own (Ruscus aculeatus), and the prickly Acacia, frequently identified with the Shittah Tree. Both these, as well as various other Brambles and Thorn bushes occur in the Holy Land, so that even if prickly plants alone were employed in hedge making the variety would be great. In conclusion it may be remarked that the Hebrews had as many words for hedge, fence, or enclosure as they had for plants suitable for the purpose. Some of these were mere variants or dialectical forms, as *Sug, Zug, Suk.* Thus *Sug* is only used in *The Song of Songs* VII. 2): "An heap of Wheat set about (or hedged in, surrounded or enclosed) with Lilies." It is a delightful figure reminding one of the report of the Countess Russell's first dinner party. "A perfect hedge of the finest and rarest Orchids encircled the whole dinner table, while the centre was filled with enormous Neil Roses" (1902). The skin or husk of a Grape again is spoken of (Numbers VI. 4) as the Zag, hedge or fence of the fruit. In Hosea (II. 6) we have an allusion to hedges, fences, and thorns which is very instructive. "Therefore, behold, I will hedge up (*suk*) thy way with Thorns

---

Previous articles on "Garden Craft in the Canticles" appeared in our issues of May 31 and June 14.

(*sirim*), and I will make a fence (*gederah*) against her, that she shall not find her paths." The word for Thorns (*sirim*) is used only in the plural, and occurs in Ecclesiastes (VII. 6): "As the crackling of Thorns under a pot, so is the laughter of the fool"; and Isaiah (XXXIV. 13): "Thorns shall come up in her palaces." Of the word for a fence (*gader* and *gederah*) we have already written

Leaving many other points unnoticed, we find ourselves reaching the following conclusions:—

1. The garden (*Gan*) and orchard or park (*Pardes*) of the Canticles were enclosures with fences, hedges, palings, or walls. This implied, among other things an advanced and settled mode of life, and a sense of the value of flowers, fruits and trees.

2. Many kinds of material were in use among the Hebrews for hedges and fences. Among these the most highly favoured were plants which bore strong thorns and prickles. The Cacti and Euphorbias are much in use in some lands for such purposes, but the Indian Fig or Prickly Pear is a recent introduction into Palestine. There were, however, many native spine-bearers, such as the Buckthorn, the Spina-Christi, the Acacia, the Butcher's Broom, and the Bramble; while other plants were also available if prickles were not essential.

From this position we can advance to a consideration of the various fruits and flowers of *The Song of Songs*, the vineyards and orchards, the herbs and perfumes, and all other products and adjuncts of an ancient Eastern garden. *Hilderic Friend.*

BULB GARDEN.

SNOWDROPS.

As Mr. P. Murray Thompson (see *Gard. Chron.*, May 10, 1924, p. 276) and the writer evidently view the merits of the Galanthus family from very different points of view, he liking the big blooms—what I term the bloated, over-fed looking forms—and I the small decorative species, of which G. nivalis is typical, it would be futile to enter into a discussion on that point. He may recollect the story of the heated argument between a Scottish and an English woman as to the respective merits of the two countries, in which everything seemed to be better in Scotland than in England; at last, thoroughly exhausted by the so-called advantages of Scotland, Mrs. Emerson exclaimed: "Surely, Mrs. McDonald, you'll acknowledge that the English Apples are better than the Scotch," to which came the prompt reply, "Well, I'm quite willing to argue that point, tae (also), but I'll premise my argument by saying that I prefer my Apples sma' and sour." So I like the Snowdrops small and numerous. I may state, however, I have several of the forms named, of which possibly G. Elwesii and G. Fosteri are the worst offenders. I also recollect G. plicatus has large bulbs and leaves, the latter some twelve inches long and two inches broad, but size of bulbs and leaves, alas! do not appeal to me; the price may be big also, but neither does that attract me.

As to the yellow colour in Daffodils, this is another very wide subject, but here might I say that the variety Van Zion (Telamonius plenus), which he happens to mention, is one of the very worst offenders, being the extreme of crude, undigested yellow. Frank Miles on the other hand is good, the perianth being a fine Primrose-yellow. Possibly yellow is less good in nature than almost any other colour, but I am not at the moment interested in either "big Snowdrops" or "yellow," the point on which I am seeking information being the propagation of G. nivalis by seeds.

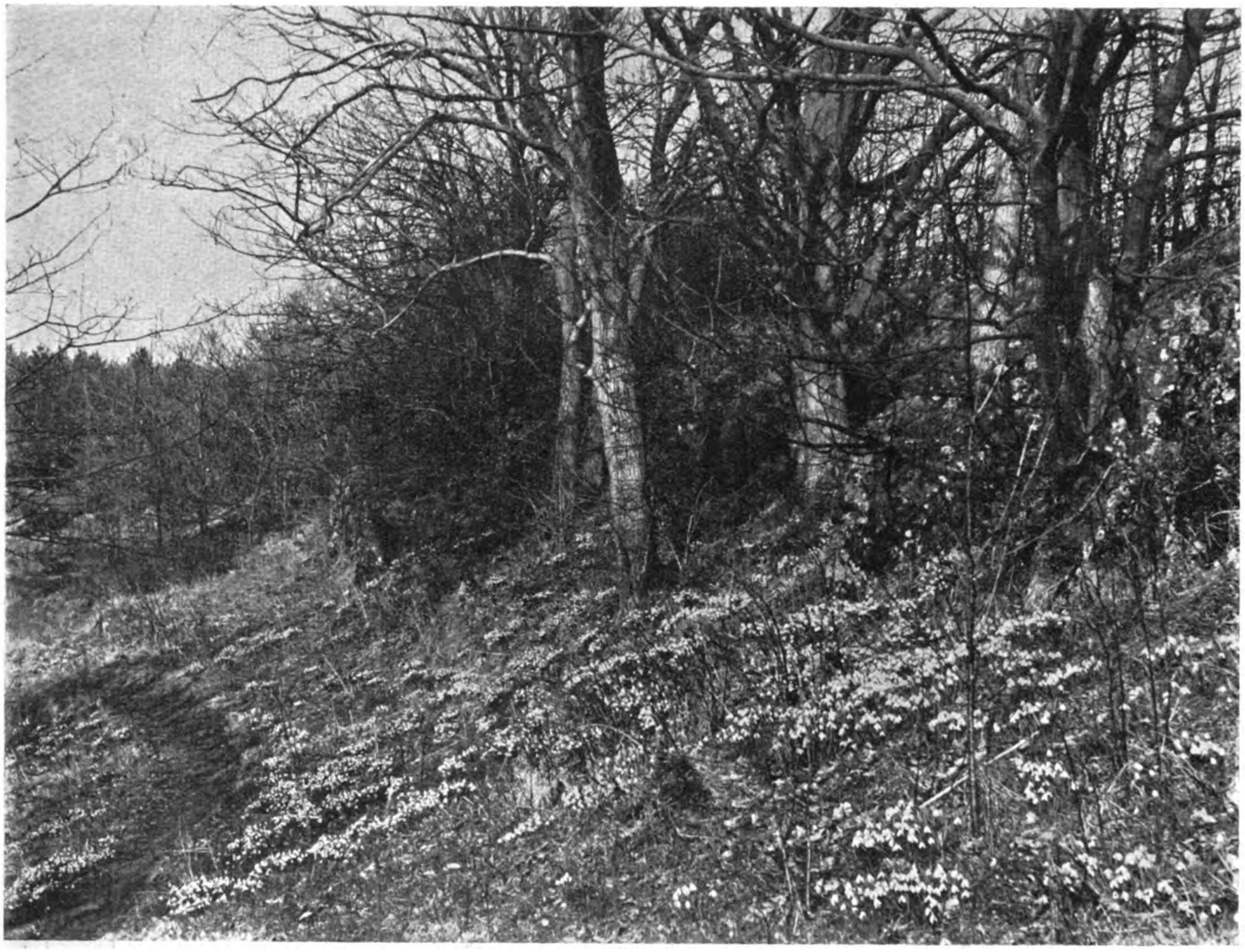


FIG. 10.—AN ARTISTIC AND NATURAL GROUPING OF SNOWDROPS.

If my critic will kindly glance at my previous letter, he will see I make it abundantly plain, what to my mind is an ideal home for the Snowdrop (Fig. 10). "On rocky banks in a glen under old Oak trees, with a running brook and a carpet of brown leaves, in their millions, they are charming indeed." I must also ask Mr. Murray Thompson, in quoting from my notes to do so fairly. He cannot take part of a sentence thus, and make me say, "Snowdrops only increase by offsets, never by seed." What I did state was "I do not exactly know how it is, but from my observations the Snowdrop only increases by offsets, never by seed," and to this statement I adhere.

But to our tale! I am surprised to learn your correspondent has seemingly found Snowdrops in an Ivy bank, under Beech trees. It is about the last place one would have expected to find them. They must have had some difficulty, like the leaves that accumulate on this bank of Ivy, to work their way down to mother earth and make seedlings and leaf-mould respectively.

Few plants indeed enjoy the company of Beech trees, and I cannot even call to memory a Beech wood carpeted with Ivy, nor its clambering round their trunks, as in the case of the Ash or the Oak. That delightful poet, Thomas Campbell, wrote in "The Beech Tree's Petition":—

> "Oh! leave this barren spot to me,
> Spare, woodman, spare the Beechen tree,
> Though bush or floweret never grow,
> My dark unwarming shade below."

Surely Mr. Murray Thompson is not to be numbered with the artist, who, standing wrapt in admiration in front of a tree, said, "If that old Beech could only speak, what would it tell us," to which, after a long pause his friend replied, "I think it would say it was a Lime tree." Nor am I surprised at the hedge referred to under the Beech tree having passed away, that only coincides with the poet's contention and my observations.

The contention that the small bulblets from the centre of a clump are seedlings is to me a very weak argument; one would only expect bulbs in the centre of a half-starved clump, to be as described. How could it well be otherwise? The larger and stronger bulbs will very possibly be found below and force the weaklings to the surface; the old story of the survival of fittest. Smallness does not always mean youth. Mr. Murray Thompson would not be deceived into thinking that a half-starved jockey ill-nurtured on gin and raisins was a child!

No! plants are not such stupid things as to deposit their offspring in such uncongenial environments. Think for a moment of the devices nature adopts for the scattering of seeds far and wide. A most interesting book, if not already written on the subject could easily be, say by that most observant writer Sir Herbert Maxwell. All sorts of wings and fins to float in the air, and waft seeds to pasture new, seedpods bursting with a snap in the sunshine, scattering the contents far and wide, the fascination some fruits have for birds which greedily devour them, and deposit the seeds, such as Brambles, at the roots of shrubs, which gardeners well know to their cost.

Besides, if your correspondent will study Snowdrop fruit capsules, he will find they almost all tend outward. The seed capsules seem to me to be so arranged that they point to the outside of the clump while the increased length of the stem, after flowering, tends to deposit seeds in more congenial surroundings. The idea seems to be good enough but the absence of seeds seems to be like playing Hamlet without the Ghost.

Most thoroughly do I agree with his statement that thousands of fruit capsules are formed, so it is with mine, but he evidently, for some rather unexplainable reason, has not taken the trouble to open them and examine the contents. In thousands of instances I find mine only contain a little damp pulpy sort of stuff like cotton wool, but nothing in the nature of seeds developing. Whilst in a very few cases, and mostly on a bank which is well sheltered and fully exposed to the sun about midday, are to be found some large, plump, green fruit capsules (possibly where insects besport themselves and pollinate the bloom). On opening and examining these under a powerful glass they appear to me as though they might develop into miniature bulblets. They are about three-sixteenths of an inch in length and have a curly tail at one end which might develop into a root, they also taste exactly the same as Snowdrop bulbs—none too appetizing. That these fruit capsules are an attempt to perpetuate the race, goes without saying, otherwise the propagation other than by vegetative means needs must be slow indeed. I wrote Mr. Smith, of the Royal Botanic Gardens, Edinburgh, but he has not yet had time to go fully into the matter, though I trust he will favour us with the benefits of his observations in due course. I also wrote Professor Bower, Botanist of The Glasgow University, but he does not agree with my suggestion in thinking that bulblets are formed in the fruit capsules. It will be interesting to know the result of Mr. Murray Thompson's further investigations, say as to colour and size of the seed as well as the number in each capsule.

Since writing my last note on this subject I have a letter from Sir Josslyn A. R. Gore Booth, of Sligo, in which he says, "I used to collect Snowdrop seed, as also seed of Narcissus Pseudo-narcissus, but did not find that there was any demand for same. If you are interested I might be able to get you a few this year on hearing from you." So climatic conditions in Sligo are evidently favourable to the development of seeds in a small way. I gladly accepted his offer.

Thanks to Professor Weiss for his interesting note on this subject (*Gard. Chron.*, April 26, p. 233). In one of the cases cited G. nivalis seems to behave very much as with me though not so in the other. It would be interestieg to know the original home of the Snowdrop and how it behaves there under, no doubt, ideal conditions. One would almost have thought here in Renfrewshire that the conditions were most favourable for seed production as it does not seek heat, at least it does not respond to heat in any attempt to force it into flower, and moisture is well catered for in a rainfall of some forty-five inches annually.

I have had an interesting talk with the owner of Ardgowan, to whose Snowdrop clad woods I referred, and he informs me they were planted there, to his certain knowledge, by Lady Shaw Stuart, wife of the fourth Baronet, between 1800 and 1812. Her first husband, Sir John Maxwell of Pollock, also planted them, but the spot selected, being largely clay, did not suit them, and very few are left, but those on the red sandstone and humus from the surrounding trees, did admirably and have largely increased, though 112 years is a long time to wait, and seeds, surely, cannot be scattered other than sparingly. The following incident goes to show that there were a considerable number of bulbs planted, and incidently fixes the date of their planting. The Lady Shaw Stuart of that date evidently superintended the operation in person, and was somewhat surprised to find her men had done the planting so quickly; but her Ladyship was not long in discovering the reason, for the planters, evidently getting tired of the irksome job, threw the bulbs up into the boles of the trees. History does not say what happened, but no doubt there was a lively time at Ardgowan when this discovery was made. *Formakin.*

HORTICULTURE AT THE BRITISH EMPIRE EXHIBITION.

PLANT BREEDING AND SEED TESTING.

In continuing the notes of the horticultural scientific exhibits in the Government Pavilion at Wembley, there are a few groups of special interest concerned with the improvement of crops by systematic breeding.

The exhibit from the Welsh Plant Breeding Station, Aberystwyth, is devoted to the improvement of herbage Grasses. One exhibit demonstrates the range of variation in the inflorescence of perennial Rye Grass (Lolium perenne). The mounted herbarium specimens illustrate the average type of inflorescence borne on the plant which it represented, although the plants were grown under very similar conditions, so that the variation may be assumed to be inherent rather than imposed by external conditions. There was also a series demonstrating the variation of this Grass showing the variation amongst the inflorescences of the progency of a single self-pollinated plant. Here again there was a very wide variation showing the need for very careful selection if improved strains of this Grass are to be secured. There was also another series of specimens in pickle, the range of variation in respect of the swollen internodes in the second generation progeny of a cross between a fully bulbous and a non-bulbous form of the tall Oat Grass (Arrhenatherum elatius and its variety tuberosum). As the result of the artificial crossing of these two forms the first generation produced a plant more or less intermediate between the two parents. The Fl. progeny was then self-pollinated and the second generation plants resulting from the seed showed an exceptionally wide range of variation.

The exhibit from the Scotch Plant Breeding Station, Corstorphine, Midlothian, was concerned with the improvement of Oats by pedigree culture, the object being the isolation of pure lines, that is, of strains breeding true for all essential characters; examples of pure lines of the three varieties Sandy, Potato, Tam Finlay were shown. There was also an exhibit showing the improvement of Oats by hybridisation, the object being the production of new varieties combining the desirable features of both parents. The types shown were selections from the progeny of crosses between Sandy on the one hand and the earlier ripening and heavier yielding varieties on the other, the aim being the production of Sandy types breeding true to the characters required, that is, earlier ripening and larger grain. It was stated that if this improvement is maintained in large scale trials for which sufficient seeds should be available in 1926, these new varieties will be placed on the market. There were also ten sheaves shown representing strains selected from commercial stocks of Potato, Sandy, and Tam Finlay Oats. These represented a few of the named varieties which pass under one or other of these names in commerce. There were also photographs exhibited illustrating various types of ears and Oats showing (1) open or all sided type; (2) the close or one-sided type, and (3) the intermediate type—roughly intermediate in character between the other two.

The exhibit from the Plant Breeding Institute of Cambridge University demonstrates breeds of Wheats which have been improved by Mendelian laws and new forms of spring Wheats are now rising which will set their ears without difficulty. There is also a group labelled "Wheats for cross breeding," being a collection of varieties selected from distinct Wheats in all parts of the world, which between them should produce the required type. There are also cases of specimen grain obtained from the strong, hybrid varieties as well as sheaves representing strong grain hybrid Wheat.

The National Institute of Botany provided a very interesting exhibit and demonstated the process of testing seeds for germination capacity by means of the Copenhagen tank. There were also shown samples of seeds of various degrees of purity and germinating capacity. There was, too, a Dodder machine for the detection of the parasitic Dodder in Clover seed, as well as a diaphanoscope for detecting the light seeds in Grass samples. The exhibit was brightened by many interesting photographs, including views of the germinating and testing rooms of the Institute, and there were also photographs of a sample of seed preparatory to drawing the test sample, of the actual separation from a sample showing the pure seed, injurious weeds, useful species, other weed seeds and inert matter, together with a form on which the details are recorded. There was also a specimen of a report on a sample as issued by the Official Seed Testing Station.

THE NEW ROSE GARDEN AT KEW.

SITUATED on the south-west side of the Palm House, the old Italian Garden—as I believe it was called—has been transformed into a Rose garden, and the transformation is one which will appeal to all visitors and Rose lovers in particular. Formerly the beds, for many years past, were occupied with rather dismal, antiquated specimens of Azaleas and other peat-loving shrubs which for a brief period only were attractive. Now—and the development has been going on for two years—the beds have been refashioned, the old, starved peaty soil removed and the Roses started on their lease of life with good, rich, mellow loam. Those who saw the operation of deep trenching, drainage, and soil-making in progress in the autumns of 1922 and 1923 will not wonder that the Roses have responded well to such ideal ground treatment.

The new Rose Garden is purely formal, slightly sunken for the most part below the ground level, and divided into two exactly similarly shaped portions, bisected by a broad, grassy path leading to the middle entrance of the Palm House. Each half contains a large circular bed, about twelve yards in diameter, placed centrally and around this are smaller beds, formally disposed, of different shapes and sizes and some thirteen in number. The broad, semi-circular gravel path skirting the garden is, as heretofore, planted on each side with rectangular Rose beds.

Doubtless the improvement, in spite of the fact that so much has already been accomplished will be continued, and if suggestions are of any count, the whole tone of the Rose garden would be enchanted if the large, formal Christmas-pudding-shaped Hollies were removed entirely. True, they are fine specimens, but they are not in keeping with the English Rose and lend a sepulchral gloom to everything around. How charming the effect would be if their places were occupied with tripods of climbing Roses trained along chains hanging from one to the other.

There is still ample room for extension, for the other side of the Palm House, prettily situated in front of the Lake could be included in the scheme, for now it is only given up to Pelargoniums and the general run of bedding plants. Kew would then indeed have its National Rose Garden, and what place is better suited for a representative collection of the national flower raised and cared for out of the national funds.

To enumerate every variety growing would call for much space, but as the collection is well up to date it is perhaps worthy of a few comparative notes.

The large central beds are both occupied by white Hybrid Musk varieties; one by Prosperity and the other by Moonlight. Of the two Prosperity is by far the freer grower and it produces its double blooms in great clusters with such abundance that the bed had the appearance of a white mantle. Moonlight is, of course, not to be despised, and its flowers are not so double as those of Prosperity.

Golden Emblem is a disappointment for it does not keep its colour in hot weather, although it is a grand flower in the bud. At Kew the yellow variety Mrs. Wemys Quinn stands the sun far better and it is very free. Christine was also richer in tone in its older blooms than Golden Emblem and provided a wealth of flowers.

The paler tints of yellow, as well as cream-coloured varieties are well represented and Souvenir de Claudius Pernet proves itself a first-rate variety for the garden. This Rose has had the high honour of being awarded a Gold Medal at Bagatelle, and one from the National Horticultural Society of France. It is a magnificent colour, rich creamy-yellow, vigorous, and the bright green foliage is rendered additionally attractive by the large coral-red spines. Golden Ophelia is of pleasing form, but not so free flowering as the type, and it does not keep its colour well. Mrs. Aaron Ward, another of M. Pernet Ducher's earlier introductions, is a peculiar shade of yellow, washed with salmon, and proves a highly creditable bedding Rose at Kew, while Alex. Hill Gray, Joanna Bridge, Harry Kirk, Mme. Ravary—this and the preceding variety being exceptionally striking—Verna Mackay and Marie van Houtte are all to be seen; the last-named is not a very commendable Rose and a bed of it has a rather strange appearance, for the creamy-white flowers develop a dull rose colour when they reach their height of beauty.

White Roses, or varieties which may be regarded as such, are Kaiserin Augusta Victoria, Mme. Jules Bouche—a very good bedding Rose; Mrs Herbert Stevens, very free but inclined to sprawl and not show its flowers to the best advantage; Clarice Goodacre, a magnificent large bloom but not too freely produced, and rather pendant; Miss Wilmott, creamy-white, delicately tinged with flesh-pink in the young flowers, the latter colour disappearing with age; and Molly Sharman Crawford, an excellent Rose for the garden.

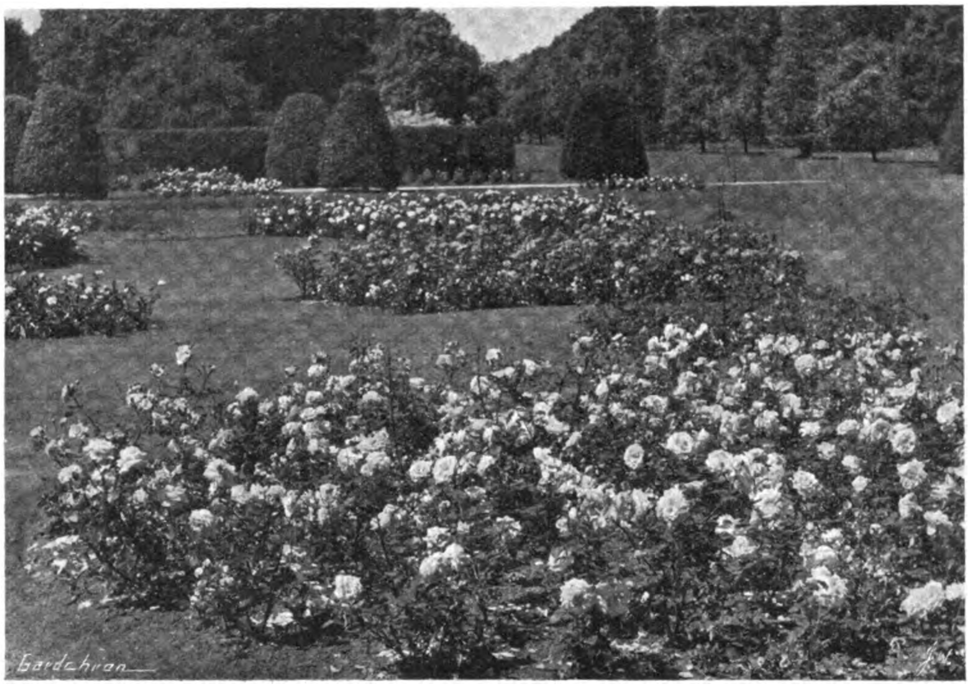


FIG. 11.—GENERAL VIEW IN THE NEW ROSE GARDEN AT KEW.

Of pink or rose-pink shades there is an abundance of varieties and the bed of Mrs. Henry Morse is outstandingly attractive. The blooms are produced in great profusion and the flowers, both in the bud and when fully opened are magnificent. At Kew it undoubtedly eclipses any other variety, and the bright rose-pink blooms are of the shading of colour which is particularly pleasing in strong sunshine as well as in the falling shades of evening twilight. Another highly meritorious Rose is Mme. Leon Pain, very free in growth with huge, well-shaped, soft-pink flowers produced in abundance. The foliage of this variety is also very attractive. Mme. Abel Chatenay is providing masses of bloom and although still a very commendable variety it must now give pride of place to Mrs H. Morse; Lady Ashtown is renowned for its freedom of growth and solid, pink flowers, and Lady Alice Stanley also proves fine for massing (see Fig. 12).

In the lighter shades of pink—of a tone best described as flesh-pink—there are the well-known varieties Ophelia and its sport Mme. Butterfly. The former is grand, but Mme. Butterfly hardly comes up to expectations out-of-doors. It may be that seeing such perfect forced blooms of this variety in the the florists' windows one naturally expects it to come with the same delicacy of outline outside. It is without doubt very free, but the bud comes squat and rugged and the blooms, when opened, lack form. President Cherioux is one of M. Pernet Ducher's recent introductions and is deserving of high rank in the deep pink class, for it is everything that a garden Rose should be. It is wonderful at Kew. Mrs. Wakefield Christie Millar is also of glowing pink colour but too stiff in growth and requires very close planting to be effective.

Other good varieties in which pink and rose predominate are represented by Grace Darling, Caroline Testout, La France, Pharisaer, Vanity Fair, and Mary Monro, the last named evidently a free-flowering Rose, but a little late at Kew and it was not at its best when these notes were made. The first developed flowers were, however, not of very good form. Mrs. Charles Russell—not to be confused with the new John Russell—is of a deep shade of rose-pink, and while very floriferous, it possesses a fault in that many of the blooms are ugly and mis-shapened and it readily develops a dingy purple hue

Coming to the Apricot shades the variety James Walley stands out prominently. It has Ophelia as one of its parents and like that variety it gives freely of its blooms which, when fully developed, are a rich pink-apricot. The buds, too, are pretty and golden tinted. Los Angeles is another fine variety of salmon-apricot colour, with lovely pointed buds, and Louise C. Breslau is a rich fiery Apricot with delightful pink buds. One of the finest displays is provided by the bed of Mrs. C. V. Haworth. The blooms are not full but are of rich apricot colour; the growth is strong and it is a great asset to the not over numerous really good bedding Roses. Margaret Dickson Hamill is of entrancing colour of bright Apricot-yellow and a beautiful Rose for bedding. It is unfortunate that its flower stems are not a little stronger. Others which may be considered under this colour grouping are the well-known Lady Hillingdon and Lady Roberts, of magnificent rich tone and very free, while of orange, salmon, and allied shades there are Padre, a glorious variety for massing, and Mrs. Oakley Fisher, a single, deep Apricot-yellow flower. Duchess of Wellington proves a bedder of first quality, its coppery-Apricot flowers making a wonderful display, while of equal merit is Lady Elphinstone, a semi-double flower of rich Apricot shade. Emma Wright does not seem to enjoy hot weather and while of fine growth and with an abundance of orange-coloured flowers the effect was completely spoiled by a quantity of withered blooms on the bushes. It seems to be a peculiarity of this Rose not to shed its petals quickly, and these in hot weather soon become browned and unsightly if not removed. Independence Day is providing a big splash of colour and it is certainly a Rose to warrant a place in every garden, while Gorgeous is a veritable gem, the bushes being laden with orange and coppery-pink blooms. Henrietta, rich salmon and Mrs. A. R. Waddell, red-orange, are also represented, and the latter variety is wonderfully free. Mr. Alfred Tate, perfect in bud and of rich coppery-salmon, is another superb Rose, but proving very shy in this—its first year

The red and scarlet varieties are very distinct and the old favourite, General McArthur excels itself. It is not uncommon in the Rose garden to see visitors on bended knee smelling this and that variety to test its perfume, and more often than not a sigh of disappointment follows. General McArthur is, however, in a class by itself, for not only is it rich in fragrance, but it unlocks its perfume and the atmosphere is redolent with its sweetness for yards around. Then there is K. of K. and Red Letter Day - two charming Roses for bedding—and Prince of Wales with its huge Cherry-red flowers carried on stiff stems makes a very noteworthy bed. Mrs. C. E. van Rossem, of Dutch origin, is another real gem of deep velvety red colour and was raised between Leuchtfeuer and Red Letter Day. I would undoubtedly give this variety a place of high distinction for it is ideal for bedding purposes. Princess Mary, being a single flower, rapidly falls to pieces, but it is a deserving variety as it blooms profusely; W. C. Gaunt, on the other hand, is not very free with its rich vermilion flowers, although its shyness may be accounted for by the youthfulness of the trees. Augustus Hartmann does not prove of much value at Kew; its flowers are scanty and the red colour soon fades into a dirty purple; Hadley, also blooms sparingly.

In the above notes no account has been taken of the Hybrid Perpetual varieties, which occupy positions on the outskirts of the Rose garden. These include many popular varieties, and Ulrich Brunner, Captain Hayward, Mrs. John Laing, General Jacqueminot, and Hugh Dickson are all making a very impressive show. It seems a pity that this section is being neglected by the hybridists. Red, scarlet, and pink are the predominating colours—with the exception of one or two white varieties—and there is surely room for extension seeing that the class is so useful for giving effective displays. *R.*

HARDY FRUIT GARDEN.

RAISING SEEDLING APPLES (see p. 398).

I, too, am keen on raising Apples, but unless one has what is likely to be a permanent situation the work is not worth while. In the various notes on Apples no one has mentioned the old Blue Pearmain, a very late keeper for kitchen and dessert use, keeping well into May; Hambledon Deux Ans, a good late cooker; or Hanwell Souring and Hollandbury. I have not failed to secure a crop of Blue Pearmain each year for a period of eleven years. *Unit.*

MARKET FRUIT GARDEN.

June was divided into wet and dry halves. Of the first twelve days nine were wet, the rainfall amounting to 1.94 in.; but in the remaining eighteen days there was only one slight shower (0.02 in.) at my place. The dry, sunny period was most welcome. It ripened the Strawberries, toughened the sappy-looking foliage of fruit trees, and allowed of much effective work against weeds. The trees, with very few exceptions, are now looking remarkably well. They are not troubled by insect pests; and fungous diseases, with the exception of scab on Pears, are evidently under control. Apples are by no means free from scab, but it has not developed so seriously as appeared likely a few weeks ago. The general well-being of the trees is of importance with respect to next year's crop rather than the present one. They are carrying all too little fruit now, but it is to be hoped that they are making buds for next season's blooming.

Orchard Fruit Scarce.

Since I wrote about fruit prospects a month ago they have undergone a change for the worse. Apples are even lighter than was expected. At one time the varieties that bloomed appeared to be setting well, but there has since been much dropping of fruit. In some cases, notably Queen, the trees have thinned themselves beautifully, leaving one Apple to a truss with remarkable regularity: but other varieties have decidedly overdone it. Lord Grosvenor appeared to have set an enormous crop for the second year in succession; and I was congratulating myself on having overcome its rigid alternate year bearing habit by the use of manures. It has now corrected the mistake, and dashed my pride by dropping almost the entire crop. I am not sure that this was not helped by spraying with lime-sulphur for the prevention of scab. The only varieties which have set enough fruit to require artificial thinning are Early Victoria and Early Julyan; and as these are early kinds they will be left until the thinnings are just big enough to be saleable.

Pears are very scarce indeed, and Plums remain as reported last month, with Czar as the only full crop, and River's Early Prolific and Belle de Louvain light to moderate. It will thus be a very light harvest of top fruit for me, and apparently for many other growers in South-east England, for reports indicate diminishing prospects.

Soft fruits, fortunately, are looking very well. Strawberries in my garden, which are not grown for sale, have seldom been better, if ever; and Gooseberries, Raspberries, and Red Currants are most promising. Black Currants, an important market crop, look extremely well, and are beginning to colour.

Cob Nuts promise well for a good yield.

Spraying to Prevent Scab.

I am pleased with the control of Apple scab obtained up to the present by spraying. There is certain to be a lot of scabbed fruit after such a wet spring; but I consider that the control has been better than usual in such unfavourable circumstances, probably because spraying was begun very early. The wash used was weak Bordeaux mixture with the addition of calcium caseinate spreader.

For several seasons I have used the Woburn formula for Bordeaux mixture, and thought I had found something quite safe. This year, however, it is fairly clear that this wash caused defoliation in the case of Cox's Orange Pippin and Beauty of Bath, although it was used at half strength. At any rate, certain batches of trees of these varieties shed a lot of leaves, though others did not. Fearing further trouble I substituted lime-sulphur with the spreader at the next application, the strength being 1 in 100 for Cox's Orange Pippin and 1 in 60 for other varieties. As mentioned above, I am not at all sure that this wash did not cause much dropping of fruit in the case of Lord Grosvenor.

A wet season, with the leaves in a tender sappy state, gives just the conditions likely to produce Bordeaux injury. I do not think I shall abandon the Woburn formula because of this year's experience, for the damage has not been very serious. It is, of course, deliberately taking a risk to use Bordeaux mixture at all on Cox's Orange Pippin, but the alternative, lime-sulphur, seems to me to be so much less effective.

We are still far from a solution of the problem of effective scab control without danger of injury to the trees or the fruit. At East Malling Research Station, where the matter is under investigation, an excess lime formula for Bordeaux mixture is favoured; but even this russets the fruit of some varieties. For Cox's Orange Pippin, lime-sulphur at 1 in 100, with arsenate of lead, is recommended, the latter presumably acting as a spreader.

I believe that the dilution of fungicides may be increased greatly if they are used in conjunction with calcium caseinate spreader: but the question is, how far can one go without rendering the fungicide useless?

Rogueing Black Currants.

I am at present engaged in rogueing Black Currants to get rid of reverted bushes. It is comforting to find that, where this was done carefully last year, there are very few fresh cases, and the sound bushes are fruiting splendidly. But many of the gaps were filled with doubtful young bushes, and these are giving me a lot of work. This was done against my better judgement. These bushes formed a nice-looking nursery bed, raised from cuttings taken on the place. I went through them last year, intending to rogue them by the leaf venation method originated at Long Ashton Research Station. As this made practically all the plants appear to be reverted, I doubted the test or my ability to apply it. The whole bed was condemned, but afterwards used after all because the bushes were wanted to fill gaps. For my sins I am having to dig most of them out again, for they are now obviously reverted. I shall never again doubt the leaf test. It is a great advantage to be able to rogue the cutting beds and make sure of planting out sound bushes from the start. Fruiting bushes can more easily be rogued every year either when in bloom or in fruit. Any reader who wishes to learn how to use the leaf method will find directions in leaflet No. 377, issued by the Ministry of Agriculture.

It is evident that Black Currants like to be planted closely together. By far the best crop I have this year is on a block of bushes which was originally intended to be a nursery plot. The bushes were planted closely together in rows only about three feet apart They made such strong growth last year, and so few reverted, that I decided to leave them alone to crop. The fruits are large and have set well, the bees evidently liking the shelter afforded by the close planting. This crop will be marketed in punnets.

Plums Healthy.

Although there are few Plums this year, the trees are a pleasure to look at, because they are so healthy. There has not been a repetition of the severe attack of brown rot which made such wrecks of them last year, although this might well have been expected after such a wet spring. It is quite likely that last year's attack assumed such serious proportions because the trees were already weakened and damaged by leaf-curling aphis. This season there was no aphis damage, and there is very little brown rot. What dead wood there is will, I hope, all be cut out and burned before July 15, in accordance with the Silver-leaf Order. This is a wise Order, though often difficult to carry out to the letter owing to pressure of other work. Dead wood is much more easily detected during the growing season than when the trees are dormant, and if it is cut out then there is no need for winter pruning in the case of most of the older trees.

The evidence that brown rot seems to follow an aphis attack emphasizes the great importance of making every effort to control aphis. I am, indeed, becoming more and more convinced of the supreme necessity for controlling all insect pests. Most of us lost the bulk of the Plum crop last year because of aphis damage followed by brown rot, and it is reasonable to attribute this year's failure to the fact that the trees have not fully recovered from the weakening effect of these troubles. In other words, the crops of two years have been lost through failure to control pests and diseases in one season. Almost any expenditure on spraying would have paid if it could have prevented such a result. Growers who did manage to control aphis last year now have a satisfactory crop, as I have seen for myself.

Tortrix Caterpillars.

Caterpillars have not given me serious trouble this season. What there were readily succumbed to spraying with arsenate of lead. The unusual feature was the prevalence of tortrix caterpillars of various species, which with me, were more numerous than winter moth larvae. Several observers report the same thing in other districts. Theobald remarks that, in some places in Kent, tortrix caterpillars seem to have taken the place of winter moth. The matter is of importance to those who depend on grease-banding for the control of caterpillars; for this plan is useless against tortrix.

Tortrix caterpillars are easily identified by the angry backward wriggle which they give on disturbance. Usually they spin the leaves together and feed between them, so that the early stages of attack are less conspicuous than in the case of winter moth. Both Apples and Pears are attacked. For several years, I fancy, tortrix caterpillars have been increasing. Early spraying is desirable.

Geese in Orchards.

The mowing of grass under the trees in the grass orchards has occupied the hands for a long time when they could ill be spared from other work. I have sometimes wondered whether geese could be run under the trees for keeping down the grass. They are certainly good grazers, and almost find their own living. Can any reader, interested in fruit growing, tell me whether they do any damage to fruit trees (half standards)? *Market Grower.*

FRUIT REGISTER.

STRAWBERRY THE DUKE.

This new Strawberry has proved to be one of the best cropping varieties in the open. The flesh is white, soft in texture and not of very good flavour, qualities that are much against it for private or dessert use, but for quantity of crop it is excellent as this year we have had fruits in abundance.

When forced this variety readily takes mildew and is attacked by red spider and does not supercede Royal Sovereign for that purpose, the older sort being still the best all round variety, but it is deteriorating. Other varieties that have given us good crops this season are The Earl, Utility, and Givons' Late Prolific. *A. B. Wadds, Englefield Gardens, Reading.*

TREES AND SHRUBS.

BERBERIDOPSIS CORALLINA.

This very remarkable shrub has done well on a north wall in this garden for a number of years. It is a Valdivian species and was discovered and brought from Valdivia by Pearse in 1862, but it is still far from common in gardens generally. Being a twining shrub it needs some support and we have it growing up wire-netting, the root-run being in cool, but light loam, freely intermixed with leaf-mould.

B. corallina is an evergreen, and the leathery, heart-shaped leaves, bright green and glaucous on their undersides, and slightly spiny at the margins, suggest an affinity with the Barberries. The blossoms, produced from July onwards until autumn, are each borne on a long and pendant stalk which, like the bloom itself, is deep blood-crimson. The flowers are composed of a number of incurved segments, thick and waxen in texture. They are almost globular in shape and very effective.

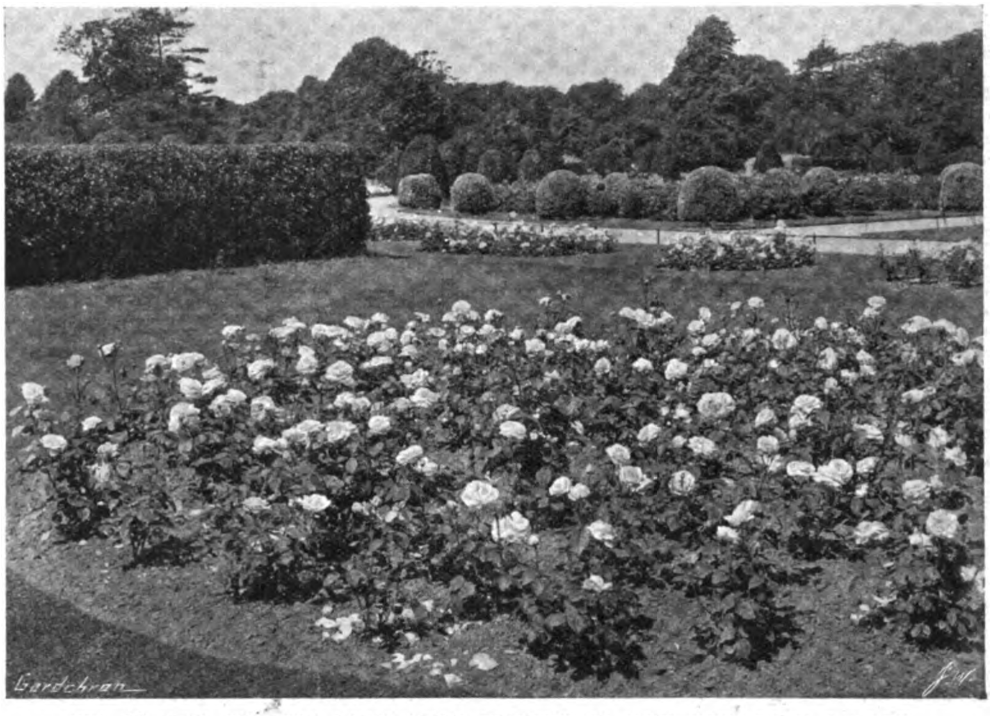


FIG. 12.—BED OF ROSE LADY ALICE STANLEY IN THE NEW ROSE GARDEN AT KEW (see p. 29).

Although this climber is not really hardy it has never been injured by cold in these gardens. For some time it was grown on a west wall, but it made no progress, the soil evidently being too dry and hot; in cooler conditions it grew with vigour and soon flowered. It is said to appreciate peat. As a climbing plant for the cold greenhouse nothing of the sort could be much better. Propagation may be effected by layering. *J., North Wales.*

COTONEASTER HUPEHENSIS.

Not many of the Cotoneasters can lay claim to much distinction as flowering shrubs, but the subject of this note is an exception. It is a deciduous species with somewhat slender, upright branches, with a graceful, arching tendency towards the top.

The laterals break in the characteristic fish-bone fashion from the main stem and these elegant sprays bear on their upper surfaces pretty clusters of pure white flowers. These stand up clear of the foliage so that a specimen in blossom bears some resemblance to Spiraea bracteata.

C. hupehensis is perfectly hardy. It is one of the earliest shrubs to break into leaf and has proved a good subject for growing among dwarf Heaths and other lowly subjects in poor, hot land. Though we have grown this species for a number of years it has not yet set fruit. I am informed that the berries are large and red. *A. T. J.*

SPIRAEA BRACTEATA.

This is not only one of the most attractive of its class but it is particularly valuable, inasmuch as it is in full flower in June, when many of the Meadowsweets have either gone off or are yet to bloom.

S. bracteata is a deciduous shrub, four feet to six feet in height, with wiry, slender and slightly-arching branches. The smooth, somewhat dark-green leaves are bluntly oval, or nearly round, often toothed at the apex, and this foliage, being fully matured at the flowering season, affords a good background for the blossoms.

The flowers are milk-white and produced in dense clusters at the tips of short, lateral twigs of the previous season's growth. As these inflorescences are very numerous and borne on the upper sides of the branches the effect produced by a well-grown bush is distinctly good.

S. bracteata is quite hardy and prospers freely under conditions usually accorded such shrubs. *A. T. J.*

PIPTANTHUS NEPALENSIS.

Piptanthus nepalensis needs the protection of a south or west wall in exposed cold places; in such a position the clear yellow Laburnum-like flowers and deep green foliage combine to form a very pleasing feature.

A deep, well-drained, sandy loam is the best rooting medium for this shrub, which may be propagated by cuttings formed of ripened wood, by seeds, which ripen freely, or by layers, the first named method being preferable.

Very little pruning is required, a little thinning and rearranging of the growths usually sufficing.

The shrub is partially evergreen, and almost entirely evergreen in a sheltered situation. *Ralph E. Arnold.*

NURSERY NOTES.

LAXTON'S STRAWBERRIES.

The opportunity, if it arises, of visiting Messrs. Laxton Bros. nurseries at Bedford during Strawberry time should never be missed, for probably nowhere can such a great variety of these fruits be found in one establishment. If the visit should coincide with the opportunity of tasting, it is more than likely that the visitor will eat enough Strawberries to last for one season at least.

For a very long number of years Messrs. Laxton Brothers have been the foremost raisers of new Strawberries; their work is carried out on scientific lines, and as the pedigree of every seedling is known they are in a peculiarly happy position when desiring to combine certain qualities in one variety. Each year Messrs. Laxton Bros. raise between five and six thousand seedlings and from this it is obvious that very large numbers of plants are grown, and a considerable area of land needed for the purpose of testing the qualities of new comers. This year about two acres of distinct seedlings are being grown, and the business of marking and selecting from this area requires great skill, as a seedling selected in any one year for some particular quality may, on fresh trial, be found wanting. The combination of half-a-dozen characters in one plant, viz., flavour, earliness (or lateness), size and colour, firmness, cropping capacity and constitution, is difficult to obtain, and very many seedlings fail just because they miss one or another of these important characters.

In addition to raising seedlings Messrs. Laxton make a special feature of the selection of true and strong plants for the production of runners, consequently they are always able to offer not only true but perfectly healthy stocks of plants. The Strawberry crop at Bedford is a heavy one this year, indeed it is one of the best Messrs. Laxton Bros. have had during the past thirty-five years.

An outstanding variety is The Duke, which was exhibited in such fine condition at the meeting of the Royal Horticultural Society on Tuesday, June 24th. This is somewhat earlier than Royal Sovereign, a heavier cropper, vigorous and of excellent constitution. It is suitable alike for forcing and outdoor cultivation. The fruits are conically-wedge-shaped and the colour is bright scarlet. Fortunately the flesh is firm and the fruits of this variety travel well when properly packed. Somewhat after the character of Dr. Hogg, but paler in colour, a heavier cropper, with the fruits borne on long trusses, the variety Lord Beatty is also excellent. Marshal Foch, a good main-crop variety with dark red fruits, combines heavy cropping capacity with fine flavour and bears some likeness to Vicomtesse Hericart de Thury, but is later. A very sweet, early variety bears the quaint name of Tit Bit, and this Strawberry, it is stated, does exceptionally well in Scotland. For high flavour Sir Douglas Haig is to be recommended, but it is a somewhat slender grower and therefore may be planted a little more closely than the varieties of the Royal Sovereign type. Abundance has very dark fruits, is a very heavy cropper, and promises to become an exceedingly popular Strawberry for jam making, especially as it is of fine flavour. King George V still holds its place as a somewhat improved Royal Sovereign, while the new Majestic has been chosen from a large number of somewhat similar seedlings to fill the place of Sir Joseph Paxton as a useful main-crop Strawberry. Laxtonian is a capital variety for the production of large fruits of fine, rich, crimson-scarlet colour, while Laxton's Victory is the successful result of crossing The Bedford with Sir Joseph Paxton, and this happy combination has given a free cropping, brilliantly coloured, second early Strawberry, which will commend itself to those who have room for only one variety.

One of the latest, if not the latest, of Strawberries has received the very suitable name of Omega; it is a particularly heavy cropper, much later than Givon's Late Prolific or even Laxton's Latest. It has a vigorous constitution and a somewhat spreading habit, so that two-year-old plants become small bushes covered with fruit, but Omega is very sparing in its production of runners.

The foregoing are but a few of the varieties grown at Bedford, but they may be regarded as a good selection of the newer sorts. The older varieties, however, are looking remarkably well this season, especially such well-known sorts as Royal Sovereign, Bedford Champion, Laxton's Leader, Laxton's Latest, and Givon's Late Prolific.

HOME CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed by correspondents.]

Pinus rudis.—In your admirable leader on "Westonbirt in Spring," mention is made of the beauty of Pinus rudis. I have searched in vain for a detailed description of this Conifer, and I should be pleased if you or any of your readers could enlighten me as to its history, etc. Evidently at Westonbirt it has grown to a large specimen. *J. Richmond.*

Yellow-flowering Tulips.—There's nothing much more interesting than comparing notes either in conversation or in the columns of a newspaper, hence I am venturing to send a few words of comment on *R. K.*'s article on page 6 (July 6, 1924) on "Yellow-flowering Tulips." I entirely agree with him about the good qualities of the early-flowerers, Prince de Ligny and Rising Sun, for planting in the garden. The first-named seems to stand out more particularly in a wet and cold blooming time owing to the conical shape of the closed flower. I would like to add another which has now been in commerce two or three years Canary Queen. It flowers in the open about the same time as Le Rêve, and grows about two feet high. The large Primrose bloom has lemon edges to its petals, which become more pronounced with age. This variety is very charming when grown under glass, but it must not be forced. Yellow Prince has all the good qualities that *R. K.* claims for it, but there is a red stain in its composition which every now and again shows itself rather too prominently. Why not substitute the pure yellow Goldfinch, which is a pure yellow sport of Yellow Prince? I often wonder it is not done more frequently. As Golden Crown is admitted under the title yellow-flowering, I would like to put in a word for Cardinal Rampolla, which I consider one of the best of all Tulips for an outside display. Of course its shade of orange-yellow is not comparable to that of the variety De Wet, but it is quite as much a yellow as Golden Crown, which, except for a short period, might often be called a red. If a "crown" is wanted I would suggest my old friend Yellow Crown. I have grown it for years and for a late, rather dwarf, pure yellow, there are few, if any, to beat it. Does *R. K.* know it? It has pointed petals and comes in for a good many pats on the back here. For late garden bedding four varieties are suggested: Inglescombe Yellow, Ellen Willmott, Gesneriana lutea and Walter T. Ware. Mine would be Arethusa, Moonlight (or possibly Honeymoon), Ellen Willmott and Avis Kennicott. I would certainly have included Walter T. Ware on account of its very rich deep yellow colouring, but I must speak of Tulips as I find them. I cannot get it to bloom with anything like freedom; I hardly get a bloom in some years and I am wondering if I have not got thieves in my stock. Of no plants can it be more truly said that they cumber the ground. They are difficult to get rid of. I doubt if the most experienced grower in Holland can tell them when they are out of the ground and dried off. I once sent about fifty Tulips to one of the best known growers there and had a dozen or ten (I forget which) returned as being "thieves." They were potted and kept by themselves and watched. Blooming time came. Thieves? no such thing: every one bloomed and showed itself true to name. Last year I became aware that I had thieves in our Salomon. My man and I picked out some that we thought looked like the offenders, the result was very much the same as in the case of my Dutch friend; but this is not an essay on Tulip thieves. Walter T. Ware never has been a success with me, I have to be content with Avis Kennicott; it is a very fine Tulip, I like it better than Mrs. Moon. There is one interesting peculiarity in this variety, the bases vary—some are very dark and some pure yellow. Has *R. K.* noticed it? If so, can he account for it? The magnificent Fosteriana has, if I remember rightly, the same uncertain base. We agree about the Primrose-coloured Ellen Willmott. For an egg-shaped flower I prefer the pale early blooming Moonlight to the deeper coloured later-flowering Inglescombe Yellow; but after all it is a matter of personal taste. Do you like your cheese coloured or uncoloured? Will Moonlight have to give place in the future to Honeymoon? It is a possibility, no doubt, and I like the shape of its flower very much. I imagine the unknown writer *R. K.* cannot know Arethusa or he would not have left it out of an article on yellow-flowering Tulips. I have not seen Magnolia, which I am told is something very wonderful indeed in size and colour, but it must be very choice if it is more beautiful than Arethusa. It is a fairly large flower of a beautiful lemon-yellow with the three exterior segments slightly turned outwards: it lasts a long time in good condition and stands rough weather well. To me there is no yellow Tulip to compare with Arethusa: over and above everything else the plant itself is well proportioned. The blooms do not look as if they were walking on stilts as do those of Aphrodite and Zulu, nor do they look top-heavy as do most "Parrots." We don't notice this point sufficiently I think. Yellow Tulips remind me of poor Robert Sydenham. I once saw, in his private garden, a round bed filled with the yellow variegated leaf form of Yellow Prince and Forget-me-Nots; it struck me as a peculiarly happy mixture and I have never forgotten it. *Joseph Jacob.*

Gardeners over Forty.—It was with some interest, that I read advertisements in the *Gard. Chron.* for head gardeners under the age of 40 to 45. On April 5, 1915, I offered my services to the British Army and served for three years and ten months with the Colours. I now find at my age, namely 56, I am not wanted, after having held the position of head gardener with the Dryden family of Canons Ashby House, Byfield, for sixteen years and four months. I wonder whether through your columns any gardener, lady, or gentleman can find a disabled ex-service man a position with a hiring wage: I am not afraid of work, indeed, none of the old gardeners are. I think you will agree with me it is very hard luck to lose a situation and then be considered too old to work, but not too old to fight for one's country. It does not say much for the ex-army officers who want men not over forty years of age. *W. Hiorns, Manor Lodge, Keresley, Coventry.*

SOCIETIES.

ROYAL HORTICULTURAL.

Tuesday, July 8.—At the fortnightly meeting of the Royal Horticultural Society held at Vincent Square on Tuesday last, there was a brilliant show of Delphiniums, this flower being exhibited in great profusion. Roses and hardy herbaceous plants were also staged in large quantities. At this meeting the Clay Cup offered to the Rose possessing the true old-Rose scent was awarded to Bedford Crimson (see p. 20), which was shown by Messrs. Laxton Bros., Bedford.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the Chair), Messrs. Gurney Wilson (Secretary), Jas. O'Brien, J. Wilson Potter, E. R. Ashton, Richard G. Thwaites, W. J. Kaye, John C. Cowan, A. McBean, J. E. Shill, H. G. Alexander, Henry H. Smith, H. T. Pitt, Fred. K. Sander, F. J. Hanbury, C. J. Lucas, and J. Armstrong.

Award of Merit.

Vuylstekeara Edna, var. Normandy (*Miltonioda Harwoodii* × *Oda. Charlesworthii*) from Messrs. Charlesworth and Co., Haywards Heath.—A very elegant and brightly-coloured hybrid, the flower partaking of the form of the favourite Miltonioda Harwoodii, but much enlarged. The plant bore a graceful, branched spike of thirty-one flowers, the sepals and petals of which are bright scarlet, the lip being rosy-red with a well defined yellow crest at the base.

Groups.

Messrs. Stuart Low and Co., Bush Hill Park, Enfield, and Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for a very attractive group, the middle plant in the back row being an excellent specimen of Dendrobium thyrsiflorum, with many pendulous spikes of creamy-white flowers with yellow lips. Other species of Dendrobium, including the bright blue D. Victoria Regina, were shown, and species generally were a feature in the group. Among species and varieties of species noted, the large white Cattleya Warscewiczii rochellensis was the main attraction. In the centre of the group was the pretty Brassia verrucosa and beside it were several Maxillarias, including M. ochroleuca and M. luteo-alba. Odontoglossum cirrhosum, an old, but un-matched species in its, class, Sarcanthus filiformis and others of the botanical section were also shown. Sophro-Laelio-Cattleya Argonaut (L-C. Tunis × S-L. Orpetiana) with a spike of three mauve flowers which have a claret-crimson lip and yellow disc, was the most remarkable of the hybrids.

Messrs. Sanders, St. Albans, were awarded a Bronze Banksian Menal for a small group well displayed with foliage plants, among which Begonias of the Rex section were represented by new forms. The greatest interest centred in the selection of rare Bulbophyllums which included the singular B. longisepalum, with purple spotted flowers six inches in length; B. patens, of the B. macranthum section, a specimen of which was shown for comparison; B. Lobbii and its more ornate variety Colossus; Gongora maculata with insect-like flowers, and the elegant Physosiphon Loddigesii with many sprays of orange-red flowers. A selection of fine forms of Cypripedium Godefroyae; the unique Cattleya nivea (Leopoldii alba × Lady Veitch) a pretty white flower with a tinge of sulphur-yellow in the sepals and petals; the very handsome Brasso-Cattleya Ilene var. Maharajah and other hybrids were also shown

Mr. G. Reuthe, Keston, sent a pretty Orchid named provisionally O. ericetorum; it is probably a natural hybrid.

Floral Committee.

Section A.—*Present*: Messrs. Henry B. May (in the Chair), J. F. McLeod, H. J. Jones, A. Turner, J. M. Bridgeford, E. K. Janes, W. Howe, Montagu C. Allwood, W. H. Page, W. Stephens, Jas. B. Riding, C. E. Pearson, D. B. Crane, W. P. Thomson and W. D. Cartwright (Secretary).

Section B.—*Present:* Mr. Gerald Loder (in the Chair), Sir William Lawrence, Messrs. James Hudson, W. J. Bean, G. Harrow, G. Reuthe, H. V. Warrender, E. H. Wilding, Charles T. Musgrave, T. Hay, R. C. Notcutt, Reginald Cory, A. Bedford, W. B. Cranfield, F. G. Preston and Amos Perry.

Awards.

First-Class Certificate.

Lilium Farreri.—This new Lily received an Award of Merit at the Chelsea Show in 1920, and was illustrated in *Gard. Chron.*, June 5, 1920, Fig. 133. The plants on this occasion were much stronger, and some of them bore inflorescences with so many as three or four blooms, which are developed on long, more or less curled stalks. The foliage is alternate or in whorls, the upper leaves being much smaller than the lower ones, those at the base being lanceolate and about half-an-inch broad. The flowers have recurved segments, which are white, with much spotting of claret-crimson, the most pronounced spotting being at the base of the segment. Shown by Lt.-Col. Messel, Nymans, Handcross, Sussex.

Awards of Merit.

Campanula Zoysii.—This dwarf Campanula has delicate china-blue flowers set at almost acute angles to the stalk. They are urn-shaped and the segments at the entrance form four or five pouch-like appendages. The whole plant is not more than two to two and a half inches high and the specimen shown was smothered with the pretty blossoms. This Campanula should make an admirable subject for the alpine garden. Shown by Messrs. R. Tucker and Sons.

Atraphaxis Billardieri.—This is a thin, wiry shrub with very small leaves and short flowering branches. It was shown in fruit, the small, pinkish, persistent segments enclosing a single, triangular black fruit, the whole having a superficial resemblance to some of the small Polygonums in fruit. Shown by The Director, Royal Gardens, Kew.

Coreopsis auriculata superba. — This very beautiful Coreopsis belongs to the lanceolata type and is therefore a perennial. The flowers are a rich, deep yellow with a crimson blotch at the base of each floret, which is notched at the margin, giving the flower a fimbriated appearance. The flowers are borne on long, stiff stalks and are admirable for purposes of cut blooms. Shown by Messrs. Ladhams, Ltd.

Begonia Lady Ann.—This magnificent variety was shown as a pot specimen some two feet six inches high and bearing seven flowers and buds, each bloom being nine inches across and of a delicate shell-pink shade.

Begonia Albatross.—This is another exceptionally vigorous variety with exceeding large, pure white blooms of the Camellia-shaped type. Both these Begonias were shown by Messrs. Blackmore and Langdon.

Delphinium The Shah.—This is an exceedingly vigorous variety with massive spikes of deep mauve flowers and under petals of opal-blue—a very fine combination. The flowers are almost flattish and the dark brown stamens in the centre give them an additional attraction. Shown by Messrs. Blackmore and Langdon.

Rose Lord Lambourne.—This is a big-flowered H.T. variety with very loose petals of gold colour suffused with carmine, the latter tone being more pronounced at the edges, the base of the petals being almost clear golden yellow. The foliage is glossy and robust, Shown by Messrs. S. McGredy and Son.

Rose Fragrance.—This is a charming crimson Rose of excellent shape with a well formed centre. The colour in the younger blooms is almost scarlet, but this rich colour fades as the flowers age. The stems are long and wiry and the plant generally is of very vigorous habit. It has a very sweet perfume, hence the name. Shown by Messrs. Chaplin Bros.

Carnation Sultan.—This is a very strong and floriferous variety of Border Carnation with well shaped flowers of salmon-rose colour. Shown by Mr. James Douglas.

Groups.

As stated above Delphiniums were the feature of the show, and the large group staged just inside the entrance by Mr. T. Carlile comprised some fifty varieties exhibited in large masses. From this display a choice selection included the following:—Millicent Blackmore, with large spikes of blue and mauve flowers; Lord Derby, purple with white centre; Barbara Thomas, azure-blue; Prince Henry, The Alake, Andrew Carnegie and Lavanda—four comparatively old varieties but nevertheless very choice; Albert de Mun, pale blue; Harry Smetham, with crinkled petals of bright blue colour; Nora Ferguson, a pale blue and mauve variety, which gained an Award of Merit at the previous meeting, and Mrs. Carlile, a charming spike of pale blue and mauve flowers with white centres.

Messrs. Waterer, Sons and Crisp, Ltd., had a floor-group of Delphiniums of fine quality, and The Alake, deep purple; Nora Ferguson, Rev. E. Lascelles, deep blue with prominent white eye; King of the Delphiniums, deep blue and purple; Elsa, pale blue, and Lorenzo de Medici, lavender mauve, were a few of the outstanding varieties.

A mammoth display of Delphiniums was staged along one side of the hall by Messrs. H. J. Jones, Ltd., who, with their usual artistic skill arranged a very pleasing group. For a background about a dozen huge epergnes were employed, and the foreground was occupied with baskets, arranged at different levels, and filled with equally choice varieties. The spikes had not been disbudded and the undeveloped flowers of the axillary flower stems proved of decided value in making a very charming picture. A good selection of varieties of different colours was F. W. Smith, deep blue; Juinita, pale blue and mauve; Mrs. Stillwell, sky-blue; The Alake, purplish-blue; Ariel, light blue; Cecilia, blue and mauve; Eileen Latour, mauve; Lizzie van Veen, pale blue; H. J. Jones, deep violet-blue—a fine variety; Delightful, pale blue; Mrs. Shirley, an excellent mauve flower, and Lord Derby, one of the best of the deeper shades of blue. Hydrangeas of blue shades were shown by the same firm.

Messrs. Blackmore and Langdon were again represented by a large and creditable group, the quality of the flowers being first rate. Outstanding varieties were Millicent Blackmore, shown in fine condition; Blue Boy, brilliant blue with white centre; Blue Queen, pale blue with black eye; Lord Derby, deep violet-mauve; Lorenzo de Medici, mauve; Lord Lansdowne, one of the choicest varieties, with large individual flowers of an entrancing shade of blue; George Cochrane, deep blue and mauve; Torquoise, a good blue; Edward Bromet, an improvement on Rev. E. Lascelles, and Lady Hammick, a pure blue flower. There were also some very pretty unnamed seedlings in this group.

Mr. W. Wells, Junr., also made a feature of Delphiniums in his group, and King of the Delphiniums, Merstham Glory, mauve and blue; Lizzie, pale blue; Robert Cox, a very full spike of deep blue flowers, and Navy, Gentian-blue, were a few of the best varieties. In the front of the Delphiniums were masses of herbaceous plants, and amongst these were included Œnothera

William Cuthbertson, Inula Royleana, Helenium aurantiacum and Anthemis Kelwayi, all of yellow colour.

A table group of Delphiniums arranged in three tiers was shown by Messrs. R. H. Bath, Ltd., who had a very comprehensive collection including such sterling varieties as Sir Douglas Haig, Rene Gilbert, The Alake, Rev. E. Lascelles, Pannonia, dark blue with white centre; Lorenzo de Medici, and Robert Cox. Gladioli, principally of the G. primulinus section were also shown together with a few good herbaceous subjects.

Messrs. R. Tucker and Sons brought a fine selection of hardy plants rich in Delphiniums and herbaceous and Alpine Campanulas, and the Chalk Hill Nurseries had a group of hardy herbaceous plants, including Pentstemon barbatus, a fine hybrid Armeria named Bee's Ruby, and Aquilegia dipterocarpum, with its graceful sprays of mauve and yellow-scented flowers.

The new Mammoth White Spiral Candytuft, with single specimens growing in 5-inch pots, was shown by Messrs. Daniels, Ltd. The spikes were of immense size, from three to four inches long, and five spikes was the average number produced by each plant. In appearance it rather resembled a Stock, and we understand that the improvement and selection of this variety has been continued for no fewer than thirty years.

A choice collection of herbaceous plants was exhibited by Messrs. Maurice Prichard and Sons, and here was to be found the most charming Delphinium camelliaflora, so named because of its resemblance to a Camellia. The flowers are perfectly double and regular in shape. Stately also was another fine Delphinium, the spikes measuring about two feet long and the mauve-blue flowers nearly two-and-a-half inches across. There were also many fine varieties of Kniphofias as well as a Pink named Miss Winnie Lambert, of deep rose-pink colour and a very full flower. Iris Kaempferi was shown in many beautiful forms, and there was also a vase of Rose Jacotte, a climbing variety with salmon-apricot flowers. Campanulas comprising chiefly of forms of C. persicifolia were shown by Messrs. B. Ladhams, Ltd., and The King, deep blue; Fleur de Niege, a double white flower; and Crescent white, were the chief varieties. A pretty form of Iris laevigata named Rose Queen was also included in the group, as were also many varieties of hardy border Pinks, Lavatera Olbia rosea Ladham's variety, with large flowers, and Coreopsis lanceolata auriculata, a magnificent shade of yellow, the flowers being exceptionally large.

Stove plants, both of foliage and flowering subjects were shown by Messrs. L. R. Russell, Ltd., Caladiums, Alocasias, Crotons and Dracaenas being included in great variety together with stately spikes of Gloriosa Rothschildiana.

Messrs. Barr and Sons had a miscellaneous group of herbaceous plants, Delphiniums, Campanula lactiflora alba magnifica, Phloxes in variety, Lilium candidum and Anthemis Taplow Yellow being represented by large masses.

Liliums in variety were staged by Messrs. Wallace and Co., including large spikes of L. Martagon dalmaticum, L. Szovitzianum, L. croceum, L. Willmottiae, L pardalinum Johnsonii as well as a collection of named hybrids obtained by crossing L. Harrisonii with L. Martagon. The very beautiful Iris Kaempferi Morning Mist, white suffused with grey-blue, and I. K. Mandarin, deep violet were also of great merit.

Messrs. Chaplin Bros. staged a very attractive group of Roses, the varieties Mabel Morse and Golden Yellow being two exceptionally fine yellow sorts. Mrs. H. Morse, pink; Innocence, a large single white bloom with striking red filaments; Los Angeles, salmon-pink; Noblesse, apricot; Emma Wright, orange-apricot; and Betty Uprichard, cerise pink, were also a few of the very select vases.

Messrs. S. McGredy and Son provided a feast of colour with a collection of Roses consisting entirely of varieties of their own raising. There was a magnificent basket of exhibition blooms of the cream Mrs. Charles Lamplough occupying a central position, and other varieties staged in baskets, vases, and tall epergnes were the new seedling Lord Lambourne, yellow flushed with rose; Vesuvius, a deep scarlet single bedding rose; Florence L. Izzard, glowing yellow; Gwyneth Jones, fiery salmon; Admiration, light pink; and Una Wallace, deep pink.

Messrs. F. Cant and Co. had a very pleasing group prettily arranged in bunches of about a dozen flowers and included Mabel Turner, a long pointed pink bloom; Chastity, a sweet-smelling climbing white variety; Premier, a fragrant pink flower; and Mrs. Henry Bowles, rich pink.

Rev. J. H. Pemberton also had a pleasing group, prominence being given to such charming varieties as Aurora, a perpetual hybrid Musk with yellow flowers, Vanity, Nur Mahal, The General, and Francesca, rich apricot-yellow.

In the collection of Roses from Messrs. B. R. Cant and Sons prominence was given to the apricot pink Lady Roundway, and amongst the many other varieties were outdoor grown blooms of America, pink; Lady Dixon Hartland, shell-pink; Sovereign, a rich piece of colouring; and Christine, yellow. There was also a group of Roses staged by Messrs. William Lowe and Son, who had magnificent examples of The Queen Alexandra Rose, Golden Emblem, Colonel Oswald Fitzgerald, Covent Garden and Mrs. Bertram Walker.

Mr. W. Easlea also had a small group in which Everest, creamy-white; Isobel a single cerise-pink; Torson d'Or, deep apricot; and Lamia, apricot and pink, were noted, while in the exhibit from Messrs. D. Prior and Son, there were some charming epergnes of Mrs. H. Morse, Los Angeles, Augustus Hartmann, Elvira Aramayo, dazzling scarlet; and the popular Frau Karl Druschki.

Messrs. G. Stark and Son showed the pale blue Campanula persicifolia Ryburgh Bells, and also their re-selected strain of the double Shirley Poppy known as The Ryburgh Hybrids; while Mr. Amos Perry had a huge selection of hardy flowers amongst which were the beautiful Coreopsis grandiflora Perry's var.; Hemerocallis hybrids, Calochortus venustus var. Vesta, delicately veined and blotched; Kniphofia gracilis hybrids and Delphiniums in variety.

Messrs. Gavin Jones and Ingwersen had a very freely flowered specimen of the difficult Eritrichium nanum in their collection of plants, and Messrs. Harkness and Sons made a feature of Delphiniums and Lupins of many shades of colour. Mr. G. Reuthe showed a very interesting collection of hardy flowers and shrubs.

Messrs. Kelway and Son again occupied a corner of the hall with a group of Delphiniums, the spikes of Smoke of War, Star of Langport, Monarch of All, Dusky Monarch, and Duchess of York being very handsome.

Messrs. S. Low and Co showed perpetual-flowering Carnations and Roses in great variety; and Mr. C. Engelmann also had a very meritorious group of perpetual-flowering Carnations of very fine quality.

Messrs. Allwood Bros. had a low lying table arranged the main part with many varieties of Dianthus Allwoodii; these included Sybil, rose pink; Suzan, a mauve pink with crimson centre; Jenny, salmon pink with neatly crenate petals and Joyce, pink with dark centre. There were also a number of perpetual-flowering Carnations arranged on a table at one end of the exhibit, while close by Mr. James Douglas staged a number of Border Carnations, of which Bookham Rose, Princess Mary, a variety which received a First Class Certificate at the Chelsea Show, 1922, possesing deep salmon apricot flowers; Bookham Yellow and White Clove were a selection. Miss S. S. Thompson was responsible for a very neat and interesting collection of Cacti growing in pans and vases. Klenia articulata, Echinopsis Grusonii, Mammillaria rhodantha, and the hairy Pilocereus senilis, were a few of the many sorts shown. There were also numbers of specimens growing in diminutive pots which attracted considerable attention.

Messrs. F. G. Wood in his collection of hardy flowers made a special feature of Campanula Jenkinsæ, a charming white-flowered hybrid, and Messrs. Carter Page and Co. had a group of Delphiniums, Phloxes and general herbaceous flowers. Gaillardias and varieties of Chrysanthemum maximum figured prominently in the display of hardy flowers from Messrs. Rich and Co.

Fruit and Vegetable Committee.

Present:—Messrs. C. G. A. Nix (Chairman), J. Cheal, W. Poupart, P. C. Veitch, H. S. Rivers, Geo. F. Tinley, S. B. Dicks, W. F. Giles, T. Pateman, A. Metcalfe, E. Laxton, E. A. Bunyard, John Harrison, H. N. Rawes, Geo. Kelf and G. Reynolds.

Messrs. Laxton Bros. exhibited varieties of Strawberries, and their fine Red Currant named Laxton's Perfection. The Strawberries included excellent samples of Lord Beatty, Majestic, Omega and Laxton's Latest. (Hogg Silver Medal).

Leopold de Rothschild, Esq. (gr. Mr. G. Reynolds), Gunnersbury Park, Acton, showed magnificent Melons, for which a Silver Hogg medal was awarded, and a Cultural Commendation to the Gardener, Mr. Reynolds. The very large fruits were in perfection of condition; the yellow skin is well netted; the flesh is white. The variety is very like Ringleader. The seeds were said to have been brought to this country some years ago by Mr. Rothschild, and the variety has been named Gunnersbury Park.

Fruits of a Rubus very much like those of a Loganberry, said to be a cross between the Loganberry and the Laxton Berry, were shown from Hanway Lodge, Belvedere Street, Ryde, Isle of Wight. The name Hanway Berry was given to the fruit, which seems quite similar to the Loganberry, although the foliage may show a little influence of the Laxton Berry. It was recommended for trial at Wisley.

On this occasion Messrs. G. Bunyard and Co. offered medals for Cherries. There was only one response, but this was a good collection staged by Mr. T. Pateman, from Sir Chas. Nall Cain's gardens, at Brocket Hall, Hatfield. The varieties included Elton, Kentish, Frogmore Prolific, Bigarreau de Schrecken, Florence, Bigarreau Noir de Guben, May Duke, Emperor Francis, Bigarreau Napoleon, Bedford Prolific, and Waterloo. (Silver Bunyard Medal.)

Medal Awards.

Gold.—To Messrs. Blackmore and Langdon for Delphiniums.

Silver-gilt Banksian.—To Messrs. H. J. Jones, Ltd., for Delphiniums; and to Messrs. Chaplin Bros., for Roses.

Silver Banksian.—To Messrs. Allwood Bros. for Carnations; to Messrs. Barr and Sons, for hardy plants; to Messrs. R. H. Bath, Ltd., for Delphiniums; to Mr. J. Douglas, for Border Carnations; to Messrs. McGredy and Son, for Roses; to Mr. T. Carlile, for Delphiniums; to Messrs. B. R. Cant and Sons, for Roses; to Messrs. J. Kelway and Son, for Delphiniums; to Messrs. B. Ladhams, Ltd., for hardy flowers;

to Messrs. Lowe and Sons, for Roses; to Messrs. M. Prichard and Sons, for hardy flowers; to Messrs. Waterer, Sons and Crisp, for Delphiniums; to Messrs. W. R. Wallace and Co., for Lilies and Irises; and to Miss S. S. Thompson, for Cacti.

Bronze Banksian.—To Messrs. Carter Page and Co., for hardy flowers; to Mr. W. Easlea, for Roses; to Mr. C. Engelmann, for Carnations; to Messrs. Harkness and Sons, for hardy flowers; to the Orpington Nurseries, for hardy flowers; to the Rev. J. Pemberton, for Roses; to Mr. Amos Perry, for hardy flowers; to Messrs D. Prior and Son, for Roses; to Mr. F. G. Wood, for hardy plants; to Mr. H. Hemsley, for hardy plants; and Mr. G. Reuthe, for hardy plants.

STREATHAM ROSE AND SWEET PEA.

The fourteenth annual exhibition of this Society was held in the Congregational Hall, Streatham, on the 4th inst., and proved to be a great success, indeed, rarely has the Society been able to provide so fine a display of Roses and Sweet Peas.

In the principal Rose class open to nurserymen the Silver Cup and first prize was won by Messrs. F. Cant and Co. with a fine set of thirty-six blooms, distinct, among which there were especially good examples of Golden Emblem, Florence Forrester, Mildred Grant, Augustus Hartmann and Mrs. A. Carnegie. Messrs. B. R. Cant and Sons obtained the second prize for a capital set in which the most prominent flowers where Rev. F. Page Roberts, Courage, Mrs. C. Lamplough and W. E. Wallace. The third prize was awarded to Messrs. D. Prior and Sons. The best basket of fourteen blooms of any one variety of Rose was shown by Messrs. Chaplin Bros., who had excellent flowers of Mrs. Henry Bowles; Messrs. D. Prior and Sons gained the second prize with Mrs. Henry Morse. The Streatham Cup offered for a display of eighteen distinct varieties of garden Roses arranged on a space seven feet by three feet, was won by Messrs. Chaplin Bros., who had a very pleasing arrangement of vases of excellent flowers which included Emma Wright, Mrs. Tresham Gilbey, Red Star, Los Angeles, Betty Uprichard and Independence Day. Messrs. F. Cant and Co., the only other exhibitors in this class, were placed second.

In the class for twelve blooms distinct, open to all amateurs, the Norman Rogers Challenge Cup was won by Mr. C. H. Rigg, Tetley Lodge, St. Albans, who had an excellent set which included a fine example of Mrs. Foley Hobbs, which was awarded the silver medal offered for the best bloom in the show; Mr. A. S. Coxshead, Ambleside Avenue, Streatham, gained the second prize, and Mr. J. Ford, Molbea, Surbiton, third. Mr. Coxshead had the best five blooms of any one variety and exhibited Frau Karl Druschki. Mr. C. W. Edwards, Brentwood, Carshalton, won the first prize for twelve blooms, distinct, in the open section, and was followed closely by Mr. S. R. Laughton, Wellmeadow Road, Catford, while for three vases of distinct varieties, three blooms of each, Mr. Norman Rogers, Putney, had the best exhibit.

There were two open classes for Sweet Peas, but the competition was not very keen in either. For twelve bunches of distinct varieties, Mr. M. W. Deal, Cheshunt, was awarded the first prize and his set included excellent bunches of Gladys and Mrs. Tom Jones. Mr. J. Ford led in the class for six bunches of distinct varieties.

Mr. Ford was particularly successful in the amateurs' section, in the class for six bunches, distinct varieties, where the first prize is the Streatham Traders' Challenge Cup. He was easily first among about eight competitors and showed fine flowers of Picture, Constance Hinton, Royal Scot, Powerscourt, Hebe and Matchless; second, Mr. J. J. Baker, West Street, Carshalton, and third, Mr. F. G. Holmes, Glenesca, Streatham. The last-named exhibitor won the premier award and cup for six bunches of Sweet Peas, distinct, in the local section, and Mr. A. Curtis, Sunnyhill Road, Streatham, was placed second. The best vase of twenty-five sprays of Sweet Peas arranged with any kind of foliage was exhibited by Mr. G. Francis, Streatham.

WINDSOR, ETON AND DISTRICT ROSE AND HORTICULTURAL.

July 5.—The King's Challenge Cup, which is offered for the best forty-eight distinct Roses, always secures strong competition at Windsor, but it has rarely, if ever before, been won with a finer collection than that shown by Messrs. Frank Cant and Co. this year. At Regent's Park a week previously Messrs. F. Cant and Co. won premier honours with splendid exhibition blooms, but those were eclipsed on the present occasion. Not only was the quality very high but the exhibit contained a very pleasing variety and the disposition of the different colours was very tasteful. The exhibit was of such uniform quality that none could well be selected as of outstanding merit, but the following are the names of representative varieties: Mrs. George Norwood, Colcestria, Una Wallace, Mrs. Henry Bowles, Mrs. Wallace and H. Rowe, pinks; J. G. Glassford, Edward Mawley and George Dickson, reds or crimsons; Mr. Henry Morse and Dean Hole, blush pinks; Mrs. Charles Lamplough, Nellie Parker, white; Maman Cochet and Snow Queen, white or cream. Messrs. D. Prior and Son won second prize in this great class, and their collection included splendid specimens of Premier, Mrs. George Norwood, Capt. F. S. Harvey Cant, Mrs. Amy Holland, Mrs. Elisha J. Hicks, and Souv. de Georges Pernet. Messrs. B. R. Cant and Sons, who were third, had very fine blooms of Rev. F. Page Roberts and H. V. Machin.

The eighteen Tea Roses which won the first prize for Mr. George Prince were equally as good as those he showed at Regent's Park. W. R. Smith, Madame Jules Gravereaux, Mrs. C. Hall, Alex. Hill Gray, Mrs. M. Kennedy, and Mrs. Edward Mawley are the names of a few of his delightful varieties. Messrs. D. Prior and Son, the second prize winners, included Nita Weldon, White Maman Cochet and Molly Sharman Crawford in great beauty; third Mr. E. J. Hicks.

In the class for twelve distinct varieties, three blooms of each, the same very high standard was maintained. Messrs. D. Prior and Son were placed first with splendid trios of E. J. Browne, Capt. Kilbee Stuart, and George Dickson, of the reds; Mrs. Henry Bowles, Premier, and J. W. Dunlop, pinks; Mildred Grant, Lady Barham, and Mrs. Elisha J. Hicks, of paler shades. The second prize was awarded to Messrs. B. R. Cant and Sons, who staged good triplets of Cleveland, Capt. Kilbee Stuart, and George Dickson; third, Messrs. Frank Cant and Co.

Dazzling blooms of H. V. Machin, shown by Messrs. B. R. Cant and Sons, were deservedly placed first in the class for a dozen blooms of any H.P. or H.T. Roses. Snow Queen, staged by Messrs. D. Prior and Son, won second prize, and Mrs. Elisha J. Hicks, shown by the raiser, came third.

As at Regent's Park, Mr. George Prince set up lovely Tea Roses. His first prize dozen at Windsor included W. R. Smith, White Maman Cochet, Mrs. Herbert Stevens, and Mrs. Campbell Hall of great excellence. In this strong class Mr. Elisha J. Hicks was second, and Messrs. D. Prior and Son were third. The former had a delightful bloom of Mrs. Foley Hobbs. The class for twelve bunches of Decorative Roses is always very popular at Windsor, both with exhibitors and visitors. This year Messrs. Frank Cant and Co. won the first prize with handsome vases of Golden Emblem, Nellie Parker, Comte de Rochemur, and similarly attractive sorts. Mr. George Lilley was a close second and he included his Gold Medal variety, Marcia Stanhope, Elsie Beckwith, Butterfly, and Mrs. C. V. Haworth; Mr. George Prince was third.

The Roses in the amateurs' section were also of high quality. The Windsor Challenge Cup was won by Capt. W. Jarrat Thorpe, Haslecote, Gloucester. His twenty-four blooms included most commendable specimens of E. M. Burnett, Mildred Grant, Wm. Shean, Jonkheer L. Mock and Mrs. G Marriott.

Sweet Peas.

Sweet Peas of great excellence formed an important feature of the show. The chief prize winner was Sir Randolf Baker (gr. Mr. A. E. Usher), Ranston, Blandford, who has seldom staged finer blooms. He won the Prince of Wales's Cup in competition with seven good exhibits as well as the first prizes for twelve vases; the Messrs. Edward Webb and Sons' special prize; and the N.S.P.S. Silver Medal and Certificate. His many superb varieties included Mascott's Ingman, Hebe, Constance Hinton, Royal Purple, Comrade, Picture, Royal Scot and, above all, Charming, which was selected by the judges for the Silver Medal. Major C. B. Krabbe, Colcot Grange, Reading, was a very close second in the Prince of Wales's Cup class, and the two exhibits caused the judges considerable anxiety before they decided between them.

Fruit and vegetables were also particularly well shown. Mr. A. L. Wigan, Windsor Forest, had a magnificent dish of Waterloo Strawberries, and Mr. A. Coombes set up a splendid collection of vegetables in the principal vegetable class.

WOLVERHAMPTON FLORAL FÊTE.

July 8, 9 and 10.—The Exhibition held in West Park, Wolverhampton, on the above dates was a great success horticulturally, and if the fine weather that favoured the opening day was continued throughout the two following days, we feel sure that it was a financial success also. There were nearly seven hundred exhibits, and in many of the classes the competition was keen, notably in some of the classes for groups—Roses, Sweet Peas, and table decorations. There is an enthusiastic Committee at Wolverhampton, and the horticultural section of the fête has been under the presidency of Mr. F. T. Beck for about thirty years. The show has a fine setting in the pleasant park, and there is a "roominess" about the surroundings which is very pleasing on a hot day. Roses were the outstanding feature of the show, and it is doubtful whether they have ever been so good as on this occasion. We congratulate all concerned on the very fine display contained in the four huge marquees.

Groups and Plants.

Three splendid exhibits were staged in the class for a miscellaneous group of plants and flowers arranged for effect on a ground space 25 feet by 12 feet. The total prizes offered amounted to £100, and the premier award of £40 was won by Messrs. J. Cypher and Sons, with a superbly beautiful and gracefully elegant display. In the background the Cheltenham firm arranged a double arch with the point of junction pointing forward. Fine Kentias and Codiaeums towered behind the arches, and the latter were furnished with small, highly-coloured Codiaeums, Fuchsia triphylla, Selaginella caesia, and Ixoras. Tall Humeas were a great feature of the body of the group and each one was fully displayed, in a setting of Selaginella. Intervening positions were occupied by Lilium speciosum and below these were Lilium longiflorum with Francoa ramosa raising its graceful spikes aloft. The foreground had its complement of small Codiaeums, Ixoxas, Kalanchoe carnea, Cattleyas, Odontoglossums, Thunias, Nandina domestica, small-leaved Dracaenas, while the margin was finished off with small Calatheas, Nertera depressa, finely berried, Rex Begonias, and green moss. Such an exhibit would have been hard to beat anywhere. Sir G. H. Kenrick (gr. Mr. J. Macdonald), Edgbaston, won second prize with a very beautiful exhibit wherein Cymbidium Lowianum, Miltonias, Dendrobiums, Ærides, Odontoglossums, yellow Oncidiums, Francoa ramosa, Clerodendron fallax, Haemanthus sanguineus and Ixoras were the chief flowering subjects all tastefully displayed with suitable foliage plants. Mr. W. A. Holmes, Chesterfield, was awarded the third prize.

In the other large group class where foliage plants only are admitted Messrs. Jas. Cypher and Sons led once again with a beautiful display, but it fell a little short of some groups of this kind we have seen them exhibit; Codiaeums, Kentias, Dracaenas, Caladiums, Nandina domestica, Rex Begonias, Marantas, Saxifraga sarmentosa variegata and Tradescantia were pleasingly associated in an effective arrangement; second Sir G. H. Henrick; third, Mr. W. A. Holmes.

There was only one exhibitor in the class for fifteen specimen stove and greenhouse plants. Messrs. J. Cypher and Sons, who thoroughly deserved the premier award for their finely grown plants of Kalosanthes coccinea, Hydrangea Mariesii, H. paniculata grandiflora, Clerodendron Balfouri, and Draceana Victoria.

Special Group Classes.

Messrs. Blackmore and Langdon were easy first prize winners in the class for a group of Begonias and they won with a magnificent display of grand plants carrying blooms of wonderful size and colour, with beautiful Begonias in hanging baskets above. Some of the finest varieties shown were Mrs. H. A. Fox, rich pink; Queen of the Belgians, salmon; J. W. Pyman, scarlet; Mrs. W. L. Ainslie, yellow; and Sidney Robinson, orange; second, Major S. J. Thompson (gr. Mr. J. White), Oaken; third. G. Mason, Esq. (gr. Mr. T. Clark), Penn.

An interesting class was the one for a group of hardy annuals arranged for effect with suitable foliage plants. Here Mr. A. S. Dunton, Wolverhampton, won the first prize with a bright exhibit in which Nemesias, Tagetes, Statice Suworowi, Petunias, Clarkias, and climbing Tropaeolums were effectively grouped; second Mr. D. H. Justice, Wolverhampton. The best group of bedding plants was the one arranged by Mr. A. S. Dunton, who had a grand lot of Zonal Pelargoniums.

The best group of any one variety of flowering plants was the exhibit of Hydrangeas shown by Sir G. H. Kendrick; second Sir John Leigh, Bt., (gr. Mr. T. Young), Newport, Salop, with Carnations; third T. C. Sankey, Esq. (gr. Mr. R. Maybury), Wolverhampton, with Petunias.

The best table exhibit of plants and flowers arranged decoratively was from Messrs. Cypher and Sons, who associated choice Orchids with Codiaeums, Humea elegans, Liliums, Nandina domestica and Dracaenas, in pleasing fashion; Mr. W. A. Holmes, second; Sir John Leigh, Bt., third. In a local class Sir J. Leigh was successful for a group with a large circular exhibit of well grown plants.

Roses.

Roses were magnificent, indeed they constituted the great and wonderfully fine feature of the Fête. The chief class was for a collection of Roses arranged on a table space twenty-four feet by four feet. There were five entrants and the first prize of £20 was won by Mr. Thos. Robinson, Nottingham, whose display was brilliant, artistically fine, and free from the all too common defect of crowding; The pillars of Golden Emblem, Mrs. Henry Morse, Los Angeles, Madame E. Herriot, Christine, Paul's Scarlet Climber, Chateau de Clos Vougeot, and Mrs. Wemyss Quin were given ample room. The centre piece was a glorious basketful of lovely flowers of Lady Inchiquin, while other and smaller baskets were filled with Lady Pirrie, Golden Ophelia, Independence Day, Lamia, etc.; it was a grand effort. Second prize fell to Messrs. English and Son, Barwood, whose exhibit was a good one but lacked the attractive colouring of the former display. Mr. A. S. Dunton, third; Mr. J. Mattock, Headington, and Messrs. W. Lowe and Sons, Beeston, equal fourth.

In another class, for a smaller display Mr. George Prince led with a fine group that was somewhat crowded in the foreground; second, Mr. Chas. Gregory, Chilwell, Notts.

Mr. J. Mattock led in the class for eighteen bunches of Perpetual-flowering Roses with a fine set, which included Mme. Butterfly, Martha Drew, and Mrs. Henry Bowles; second, Mr. E. Gregory; third, Mr. H. Drew, Longworth. For nine varieties, Mrs. C. Whitcombe, Bewdley, scored in a very close competition

Mr. George Prnice led in the class for three dozen Rose blooms with a clean set of full-sized flowers, in which the varieties Mrs. C. Hall, Mrs. M. Kennedy, F. Forrester, Mrs. H. Morse, Mabel Morse, and Avoca, were a few of the best; second, Mr. C. Gregory; third, Messrs. Jarman and Co., Chard.

Mr. C. Gregory was the most successful exhibitor of fine baskets of Roses with a good set of Mme. Butterfly, Mabel Morse (grand golden yellow), Queen Alexandra, Golden Emblem, and Mrs. Henry Morse; second, Mr. John Mattock, who had a grand basket of Los Angeles; third, Mr. H. Drew; fourth, Mr. G. Prince.

Hardy Flowers.

Messrs. Blackmore and Langdon were the only exhibitors in a class for a display of Delphiniums arranged in any way the competitor wished on a ground space which was also at the discretion of the exhibitor. Needless to state the Bath firm put up a grand group. Outstanding varieties were the Alake, Millicent, Blackmore, Mr. Shirley, Blue Boy, Phyllis, The Shah, and Lord Derby.

Messrs. Harkness and Sons, Bedale, were without competitors in the class for a natural arrangement of hardy border flowers disposed on a space 25 feet by 7 feet. Delphiniums were largely used in association with Iceland Poppies, Astilbes, Gaillardias, Oriental Poppies Eryngiums, Verbascums, Irises, Erigerons, and and Lilium umbellatum. The same firm won first prize for a group of Lupins with a fine exhibit.

Floral Exhibits.

There were seven entries in the leading class for a dinner table decoration and the first prize fell to Sir G. H. Kenrick, whose rich and elegant exhibit consisted of species of Cymbidium Lowianum, white Phalaenopsis, Vanda teres, Miltonias, Oncidium and the quaint flowers of Gloriosa; second Mr. A. W. Shipton, Birmingham, with bright hued flowers, such as Gloriosas and Oncidiums; third, Mrs. W. A. Reeves, Balsall Heath, with Roses.

Sweet Peas.

Sir Randolf Baker (gr. Mr. A. E. Usher), Ranston, Blandford, was an easy winner of the first prize in the class for eighteen bunches of Sweet Peas, distinct varieties, and he showed grand vases of Barbara, Youth, Wild Rose, Matchless, Picture, R. F Felton, and Mrs. Chas. Unwin; second, Mr. C. H Burden, Tettenhall.

For a dozen bunches Mr. R. Madeley, Market Drayton, was first prize winner with a grand set of fresh and lovely blooms of Powerscourt, W. J. Unwin, Mrs. A. Hitchcock, Faierie Queen, Picture, Matchless, Royal Scot, Constance Hinton, Royal Purple, Hebe, Jean Ireland and Sunset; second, Sir Randolf Baker; third, Mr. C. Wall, Bath.

Vegetables.

These were shown in fine condition, and Major Parn (gr. Mr. Streeter), Wormley Bury, Broxbourne, was the most successful competitor, winning first prizes in several classes for collections.

Non-Competitive Exhibits.

Once again the trade exhibits were numerous and excellent. Messrs. Barker excelled themselves with a very large display, which took the form of a formal, terraced garden, with Lily pool, dry walls, masses of Delphiniums and other flowers. The following awards were made:—

Challenge Cup for the Best Exhibit in the Show.—Messrs. Bakers, Codsall, for their extensive and beautiful exhibit—a formal garden, &c., terraced garden.

Large Gold.—To Messrs. J. E. Knight and Son, Wolverhampton, for a fine Collection of Vegetables.

Gold.—To Messrs. E. Webb and Sons. Stourbridge, for flowers, fruits and vegetables.

Small Gold.—To Messrs. J. K. King and Sons, Coggeshall, for Sweet Peas.

Silver Gilt.—To Mr. J. Forbes, Hawick, for Pentstemons, Phloxes and Violas; to Messrs. Hewitts, Birmingham, for Delphiniums; to Messrs. Bakers, for floral designs; to Mr. W. Wells, Jnr., for hardy flowers.

Silver.—To Messrs. Dobbie and Co., Edinburgh, for Violas; to Messrs. Jarman and Co., Chard, for Campanulas and Roses; to Sir J. Leigh, Bt., for plants; to Messrs. Isaac House and Son, Westbury-on-Trym, for Scabious; to Mr. H. N. Ellison, West Bromwich, for Ferns.

Small Silver.—To Messrs. J. Reamsbottom and Co., West Drayton, for Anemones; to Messrs. J. Godfrey and Son, Exmouth, for Canterbury Bells and Scabious.

Bronze.—To Messrs. Maxwell and Beale, Broadstone, for hardy plants.

Obituary.

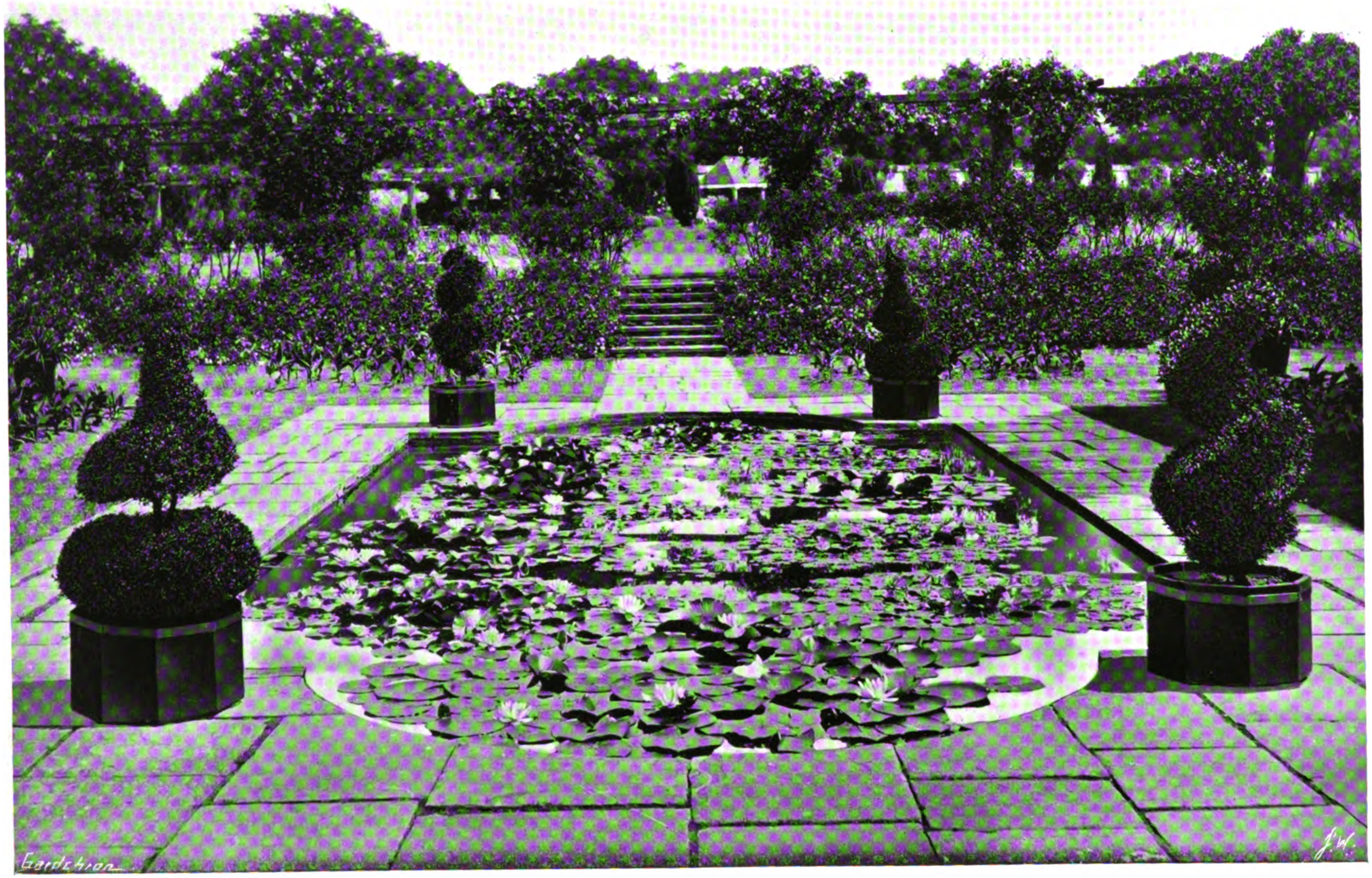
E. J. Quainton.—We record with regret the death of Mr. E. J. Quainton, gardener to the Earl of Midleton, Peper Harrow Gardens, near Godalming. He filled the position of gardener at Peper Harrow for seventeen years and was an able horticulturist. Previous to taking charge of these gardens he was a departmental foreman in the Royal Horticultural Society's gardens at Wisley, where he made numerous horticultural friends. He was well-known as a judge at local flower shows and was also interested in local public affairs. The deceased was interred at Peper Harrow Church on Saturday, the 5th inst., and amongst the large number present to pay their last tribute to this worthy gardener were the Earl and Countess of Midleton.

ANSWERS TO CORRESPONDENTS.

Seedling "Geraniums": *W. S.* It is impossible to form an opinion of the merits of the two varieties from individual flower trusses; the blooms when they reached us were much withered. They, however, appear to possess some merit, and you would be well advised to submit plants in flower to some nurserymen who specialises in Pelargoniums, or you might send specimens to the Royal Horticultural Society's Floral Committee at one of the fortnightly meetings.

Tomatos not Growing: *J. H.* The specimens sent for inspection indicate that the plants are not being given sufficient heat and the cold backward season has doubtless accounted for their dwarf growth. The temperature of the house should be kept as near 55° at night and about 65° by day. It was noticed that the side growths had not been removed; this should be done forthwith and the growth may be further encouraged by the application of a complete manure such as Clay's fertiliser.

Communications Received.—E. H.—D. M.—L. Bros. J. E. D.—J. A. E.—J. L.—G. R.—J. H.—A. W. S.


Gardchron
J.W.

THE WATER LILY POOL AT PYRFORD COURT, WOKING.

THE

Gardeners' Chronicle

No. 1960—*SATURDAY, JULY* 19, 1924.

CONTENTS.

American Seed Trade Association 39
Books, Notice of—
  The Romance of the Apothecaries' garden at Chelsea 37
Enkianthus 48
Freesias as annuals ... 48
Garden notes from S.-W. Scotland 43
Gardeners aid to a hospital 39
"Gardeners' Chronicle" seventy-five years ago 39
Glasgow Flower Show ... 38
Gooseberries, competition for 38
Hardy flower border—
  Coreopsis auriculata superba 39
  Veronica repens ... 39
Indoor plants—
  Epacris 41
Obituary—
  Donald, George ... 52
  Perkins, J. E. ... 52
  Piper, Alderman R.... 52
Orchid notes and gleanings—
  Cattleya Norman ... 42
  Laelia anceps ... 42
  New hybrid Orchids 42
  Odontoglossum Souvenir Pantia Ralli 42
Palms of the Riviera ... 42
Plants new or noteworthy—
  Atraphaxis Billardieri 43
Plants, the classification of flowering 44
Pyrford Court, Woking 45
Rawes, Mr. A. N. ... 38
Rhododendrons 46
Societies—
  Deeside Field Club ... 50
  Manchester and North of England 50
  National Sweet Pea 49
  Peterborough Agricultural 50
  Royal Caledonian ... 50
  Royal Tunbridge Wells Horticultural ... 51
Swanley Horticultural College 38
Trees and Shrubs—
  Robinia Pseudacacia Decaisneana... ... 39
Tsuga Pattoniana ... 48
Tulips: fasciated, 48; white-flowered, 47; yellow-flowering ... 48
Vegetable garden—
  The Parsnip 48
Week's Work, the ... 40

ILLUSTRATIONS.

Atraphaxis Billardieri 43
Coreopsis auriculata superba 39
Iris Kaempferi on the lake-side at Pyrford Court 45
Rawes, Mr. A. N., portrait of 38
Rose Bedford Crimson 41
Tulip Carrara 47

SUPPLEMENTARY PLATE.

View in Pyrford Court Gardens, Woking.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 62·6.

Actual Temperature:—

Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 16, 10 a.m.: Bar. 30.0°: temp. 66°. Weather, Showery.

The Chelsea Physic Garden.*

In the history of the Apothecaries' Garden at Chelsea, Dr. Drewitt has found a fine theme and has treated it finely. The history of the garden is indeed a romance, the first chapter of which is written in the circumstances of its establishment. It arose from the determination of King James I. to "stop all those wicked persons who do make and compound many unwholesome, hurtful, deceitful, corrupt and dangerous medecines and the same do sell . . . ." Wherefore the first James decided and insisted upon the separation of the apothecaries from the Grocers' Company with whom until then they had been united. This was in 1617. After homeless years the apothecaries took up their abode as a company at Cowham House on the Thames, where the little Fleet river joined it at Blackfriars. One of the members of the Company was Thomas Johnson, who produced the enlarged edition of *Gerard's Herball* and who first exhibited in 1633 Bananas (from the Burmudas) in this country. He was a field botanist, and is to be remembered also as the author of the first local list of wild flowers published in England. So, as the result of Johnson's enthusiasm, botanising excursions became a regular institution with the apothecaries, until the Civil Wars interrupted them. In spite of plague and fire the apothecaries, though their hall was destroyed, survived, and in spite of other commitments determined to lay out a garden where rare and exotic plants might be grown. They chose a plot of land of about three-and-a-half acres in the pleasant riverside village of Chelsea, and in 1673 leased it for an annual rent of £5. In those days, when Chelsea was corn land and pasture, it was bounded by three rivers, of which one was the Thames, another the Westbourne, which now flows underground ignominiously through an iron pipe. Thus the garden was well watered as a garden should be. By 1691 the garden had become a walled garden and contained rare plants and trees. But even these gardens were an expense and there were not wanting apothecaries who urged its abandonment, but the majority stoutly refused and raised subscriptions and a water gate and stocked the garden with rare shrubs, "Nectarines of all sorts, Apricockes, Cherries and Plums." Before this time, in 1683, four Cedars of Lebanon had been planted, and of these two became the famous Chelsea Cedars, the last of which lived until 1903. They were progressive in other ways, and kept winter cold from the conservatory by means of "subterranean heate," a better device than that of open fire baskets with which Oxford had experimented. Until 1722 pecuniary troubles were always vexing the Company and threatening the Physic Garden, but in that year a benefactor was found in Sir Hans Sloan, who conveyed—for a yearly payment of £5—the garden with its greenhouse, stoves and barge house to the Apothecaries Society for ever . . . "for the manifestation of the power, wisdom and glory of God in the work of creation and to show how 'useful' plants may be distinguished from those that are hurtful." Philip Miller of the *Gardener's Dictionary* fame became the gardener; hot houses and a greenhouse were built in 1732, and Philip Miller was sent with the help of subscriptions to explore Georgia. To that colony Miller sent Cotton seed which became the parent of Upland Cotton, and from that grain of Cotton seed three-fourths of the world's Cotton is descended. The garden was now famous, and Linnaeus came to see it and its elder sister the Botanic garden at Oxford. Another famous name associated with the Chelsea garden is that of Sir Joseph Banks who lived nearby and learned his plants therein and became a great and generous patron of exploration, furnishing Captain Cook's ship for his first voyage and engaging at his own expense a botanist and a draughtsman. He accompanied the expedition which discovered the great southern continent when the expedition landed in Botany Bay. As the result of a tour in Iceland, Banks inspired the erection in 1772 of what must have been the first rock-garden in England. The stone consisted of lava blocks from Hecla and forty tons from the old Tower of London, together with (alas!) a large quantity of flints and chalk—perhaps the parent of so many sad sights in the way of rock gardens, which persist in getting themselves made to-day. William Forsyth, who had learnt his gardening from Miller, was gardener in 1774 and Forsythias still bloom in his memory in "The King's Garden, Kensington," whither Forsyth went after fourteen years service at Chelsea. Another great name follows him: William Curtis, whose *Botanical Magazine* is happily still with us. John Lindley held the professorship of botany at Chelsea in 1835 and his *Introduction to the Natural System of Botany* is dedicated to the Society of Apothecaries. On Lindley's recommendation, Robert Fortune, just returned from collecting in China disguised as a Chinaman and bearing sheaves of new plants with him, Jasmine, Forsythia, Weigelia and others, was made curator. Lindley and Fortune were very energetic and introduced many improvements—the cost of which probably frightened the apothecaries; at all events Fortune left and Thomas Moore succeeded him. In 1853 began the decline of the garden—a sort of Victorian Geddes axe appears to have been brandished with some ruthlessness. Lindley left and lectures ceased and the greenhouse was sold. Tender plants were exchanged for hardy ones and no fires were lit in the hothouse where Miller had grown some of the finest tropical Orchids seen in England. After ten years the friends of botany, including Ward—of Wardian case fame—rallied to the cause of the Physic Garden. But the greatest blow was to come. The building of the Thames Embankment shut the twice daily flow of Thames water from access to the gardens and the health of the plants declined. The garden suffered from neglect but fortunately it once again survived adversity, and in 1893 by the public-spirited action of Sir W. Thiselton Dyer, Professor Farmer and others, arrangements were made whereby its upkeep should be secured by grants from various public sources, and so now under the most capable charge of Mr. Hales, the Chelsea Physic Garden flourishes once again and all well-wishers of a fine enterprise trust that henceforth it may continue unvexed by financial trouble to fulfil its part as a centre for the dissemination of scientific knowledge of plants.

---

* *The Romance of the Apothecaries' Garden at Chelsea.* By F. Dawtrey Drewitt, M.A., M.D. Chapman and Dodd, Ltd., London.

The late Sir Harry J. Veitch.—A memorial service to the late Sir Harry James Veitch was held at St. Luke's Church, Redcliffe Gardens, South Kensington, on Thursday, the 10th inst. The beautiful building was almost filled with those who had come to pay their last tribute to one whose memory they held in the highest esteem and they included a large number of horticulturists. The Royal Horticultural Society was represented by the President, Lord Lambourne and several members of the Council, and many other horticultural societies and associations were also represented. Amongst those present we noticed, besides Lord Lambourne, Mr. Geo. Monro, Mr. James Hudson and Mr. Gerald Loder, members of the Royal Horticultural Society's Council; Sir Jeremiah Colman, Chairman of the R.H.S. Orchid Committee; Mr. and Mrs. James O'Brien, Mr. W. G. Lobjoit, Controller of Horticulture, representing the Ministry of Agriculture; Mr. Leonard Sutton, Mr. M. F. Sutton, Mr. W. Poupart Mr. W. D. Cartwright, representing R.H.S. Gardens, Wisley; Mr. S. B. Slade, Mr. B. Crisp, Mr. A. C. Hill, representing the United Horticultural Benefit and Provident Society, Mr. J. B. Linford, Mr. J. F. McLeod, Mr. A. Wood, Mr. A. McKellar, Mr. W. H. Page, Mr. and Mrs. George Ingram, Mr. A. J. Monro, Mr. H. G. Alexander, Mr. W. Davis, Mr. W. J. Bean, Mr. Edward Sherwood, representing the Royal Gardeners' Orphan Fund; Mr. W. Hales, Mr. Donald McDonald, Mr. White, representing the Worcester Auxiliary of the Gardeners' Royal Benevolent Institution, Mr. and Mrs. Dawkins, Mr. Geo. Tivey, Mr. Geo. Harrow, Mr. J. C. Allgrove, and Mr. G. F. Tinley, representing the Horticultural Club and the *Gardeners' Chronicle.* Members of the late Sir Harry Veitch's family present included Miss Veitch, Mrs. James Veitch, Mrs. Morgan Veitch, Mr. Jim Veitch and Mr. Peter

Veitch. The service, which was fully choral, was conducted by Canon Buchanan who was assisted by the Rev. L. G. Vining and the Rev. W. Veitch Scorer, nephews of the late Sir Harry Veitch, and the Rev. Cary Ward. Canon Buchanan said that they were assembled to honour the memory of one who touched life at many points and he beautified each point he touched so far as he could. He was a generous man and honourable in his business dealings, but above all he was a sincere Christian. His sincere and simple-minded belief was the mainspring of his faith, and to-day many philanthropic associations and other organisations were the poorer by his death. He asked his hearers to try to profit by the example of the one who had gone and, like him, try to make the world a better place than they found it. Subsequent to the service the interment took place at Putney Vale Cemetery. A large number of mourners assembled in the Cemetery, one of the most beautiful of all London's burial places and dominated by the hill whereon is situated Coombe Wood, the place of one of the famous Veitchian nurseries. The impressive burial service of the Church of England was said over his remains and at the close the whole party assembled joined in singing one of Sir Harry Veitch's favourite hymns—"Safe in the Arms of Jesus." Thus was laid to rest, in his wife's grave, which was lined with white Roses and Laurel, this worthy Englishman, renowned horticulturist and friend of the poor and needy. The floral tributes were very beautiful and included wreaths from the President and members of the Council of the Royal Horticultural Society; the staff and Fellows of the Royal Horticultural Society; the Worcester Auxiliary of the Gardeners' Royal Benevolent Institution, the Horticultural Club, the Royal Gardeners' Orphan Fund, the United Horticultural Benefit and Provident Society, the Chamber of Horticulture, the Gardeners' Royal Benevolent Institution, and old employees of the firm—Messrs. John Heal, Geo. Tivey, Chas. Hester, Chas. Davey, Walter Davis, A. Dawkins and G. Mimms.

National Sweet Pea Society's Trials and Awards.—We are informed by Mr. A. C. Bartlett, Secretary of the National Sweet Pea Society, that the trials now being conducted in the Sion House Gardens, Brentford, will be open for inspection until July 26. Application should be made to Mr. F. J. England at the above address. In the trials a First Class Certificate has been awarded to Wembley, a lavender-coloured flower, shown by Messrs. R. BOLTON AND SONS. Four varieties have received Awards of Merit, namely, Lord Lascelles, lavender, shown by Messrs. IRELAND AND HITCHCOCK; Guinea Gold, orange, shown by Mr. J. STEVENSON; Ivory Picture, ivory white, and Mammoth, orange-scarlet, both shown by Messrs. R. BOLTON AND SONS.

R.H.S. Gardens Club.—The Annual General Meeting and Outing of the R.H.S. Gardens Club will be held on Saturday, the 26th inst. At 11 a.m. a visit will be made to Nyman's Gardens, Handcross, by kind invitation of Lieut.-Col. Messel, O.B.E., and later Messrs. J. Cheal's Nurseries, Crawley, will be visited. The Annual Meeting will be held at 5 p.m. A char-a-banc will leave Wisley at 9 a.m. for Handcross, and there are a few seats still available, for which immediate application should be made to the Club Secretary, Mr. W. D. Cartwright, R.H.S. Gardens, Wisley, Ripley, Surrey.

Royal Horticultural Society's Fruit and Vegetable Committee's Visit to Messrs. Sutton and Sons Nurseries.—On Wednesday, the 9th inst., twenty-three members of the R.H.S. Fruit and Vegetable Committee visited Messrs. Sutton and Sons nurseries at Reading and Slough to inspect the vegetable trials conducted by the firm. Mr. Giles acted as guide and explained the purpose of the trials of Lettuce, Leeks, Beets, etc., and also gave particulars of the manurial experiments. The methods of selecting, raising and improving the various strains were explained by Mr. Giles. The members were also greatly interested in the trials of flowers, which were explained by Mr. Janes. The visitors were entertained to lunch by the firm, at which Mr. Leonard Sutton presided. In the afternoon the party proceeded by charabanc to Slough, where much that was of interest was seen. After partaking of tea the return journey to London was made at 5.12 p.m., and all expressed the opinion that a most enjoyable and profitable day had been spent.

MR. A. N. RAWES

Mr. A. N. Rawes.—It is with great pleasure we reproduce the photograph of Mr. Alan N. Rawes, who for a number of years has been in charge of the fruit trials and fruit research at the Royal Horticultural Society's Gardens, Wisley. Mr. Rawes is a comparatively young man and he entered Wisley as a student in 1912. Immediately on the outbreak of war he enlisted from Wisley as a private in the Artists Rifles and in 1917 was transferred to the R.F.A. with the rank of Lieutenant. Early in 1918 he was taken prisoner of war and was repatriated at the end of that year. On his return to Wisley in 1919, Mr. Rawes was appointed officer in charge of the department concerned with fruit research and experimental work and has carried out important investigations relating to the self-fertility and self-sterility of Apples, Pears and Plums, details of which have appeared from time to time in the Royal Horticultural Society's *Journal*. This work is still in progress and Mr. Rawes is to be congratulated on the thoroughness with which he has recorded his observations and the deductions he has made from them. Other work carried out by him includes research in an important pomological matter, viz. the cropping of Apples propagated from parent trees of good and bad history, and he has also published papers on "The effect of Grass on Apple trees" and "the Summer Pruning of Apples"—the latter investigation having been in progress for twelve years. He has also completed other work relating to problems confronting fruit growers, both amateur and professional. The commercial fruit trials, now being conducted at Wisley in conjunction with the Ministry of Agriculture are also in the capable hands of Mr. Rawes. These trials are designed for the testing of fruit trees for commercial purposes and their conducting requires much careful observation, recording and experimental work as well as the raising of hundreds of stocks of each variety. Mr. Rawes is also engaged in unravelling the synonymy and classification of many fruits, while the extensive trials of Gooseberries and Raspberries now in progress are also under his care. In 1922 he succeeded the late Mr. S. T. Wright as Secretary of the Royal Horticultural Society's Fruit and Vegetable Committee. The useful work already done by Mr. Rawes is, we feel sure, an earnest of still more distinction and success in the profession to which he has committed his future.

Glasgow Flower Show.—The Secretary informs us that present indications point to the forthcoming Horticultural Show in the Kelvin Hall, Glasgow, from the 2nd to the 5th September next (inclusive), being one of the most popular and attractive ever held in Scotland. The Show will again be held under the joint auspices of the Glasgow Corporation and the Glasgow and West of Scotland Horticultural Society, and apart from numerous cups, trophies and medals, a sum of £1,500 will be awarded in prizes. £100 will be given in four prizes for the best rock or rock and water gardens, arranged on the floor level in a space 30 ft. by 15 ft. Substitutes for stone will be allowed, while water will be supplied if desired. Cut flowers of aquatic plants may be used. For the best groups of miscellaneous stove and greenhouse plants arranged for effect on the floor, to occupy a circle 20 ft. in diameter, £100 will be given in four prizes. The first prize includes the Corporation of Glasgow Challenge Cup, valued at £50. A sum of £26 will be given in four prizes for the best collection of cut Roses artistically arranged, to occupy a space 20 ft. by 4 ft. The first prize, in addition to a money prize, is the Lady Weir of Eastwood Challenge Cup. Four prizes—the first £25, the second £20, the third £15, and the fourth £10—will be awarded for the best decorated fruit tables, the collection to consist of twenty-four dishes of fruit in not fewer than seven distinct kinds, to be staged on a table 12 ft. by 6 ft. The first prize includes the *Glasgow Herald* Challenge Cup of the value of £40. A large amount of space in the hall has been reserved for trade exhibits.

Awards for British Seeds at Rio de Janiero.—At the Brazilian Centenary Exhibition held at Rio de Janiero, the International Jury awarded to Messrs. Sutton and Sons, Reading, a medal and certificate for the seeds supplied for sowing in the gardens of the British Pavilion, where the floral display was the admiration of all visitors.

Competition for Gooseberries.—At the meeting of the Royal Horticultural Society to be held on the 22nd inst., Messrs. Geo. Bunyard and Co., Ltd., are offering special medals to amateur exhibitors of Gooseberries. All growers, whether Fellows of the Royal Horticultural Society or not, are invited to compete, and the Society's officers will, if necessary unpack and stage small exhibits, provided notice is sent beforehand of the owners inability to accompany them; the Society will not, however, undertake to be responsible for the repacking or returning of the fruits. On August 12 similar medals will be offered for Peaches, Nectarines and Apricots, whilst on August 26 there will be similar awards for Plums. It is to be regretted that these competitions have, in the past, been attended with very meagre results probably because many growers have had no knowledge of them. The exhibitions in connection with the R.H.S. meetings at Westminster are now almost entirely of flowers and it would add greatly to their interest and usefulness if exhibits of both fruits and vegetables were more equal in proportion to the flowers than they are at present.

Swanley Horticultural College.—The annual speech day of the Horticultural College, Swanley, is fixed for Tuesday, July 22. At 3.30 p.m. the Rt. Hon. Noel Buxton, M.P., will distribute the diplomas and certificates won by the students.

American Seed Trade Association.—The annual convention of the American Seed Trade Association recently held at Chicago, attracted a large attendance, representing seed growers and dealers from all sections of the country. A very attractive and interesting programme was arranged and the following officers for the ensuing year were elected:—Mr. L. W. Wheeler, head of The Pieters-Wheeler Seed Co., Gilroy, California, president; Mr. Clarence D. Funk, of Messrs. Funk Bros. Seed Co., Bloomington, Ill., first vice-president; Col. W. H. Bruce, of Messrs. John H. Bruce and Co., Ltd., Hamilton, Ont., second vice-president; and Mr. C. E. Kendal, Cleveland, secretary-treasurer.

Gardeners aid to a Hospital.—It is gratifying to learn that as a result of a Garden Fête, held a short time ago in the Batts Hill House Gardens and organised by the Redhill, Reigate and District Gardeners' Mutual Improvement Society, over £600 has been handed over to the East Surrey Hospital. Last year the East Surrey Hospital benefited to the extent of £725 from the profits derived by a similar fête and as a result a gardener's bed was endowed and dedicated to the members.

Appointments for the Ensuing Week.—Tuesday, July 22: Royal Horticultural Society's Committees meet; Horticultural Club Annual Meeting and Dinner at the Trocadero Restaurant; National Carnation and Picotee Society's show at Vincent Square, Westminster. Wednesday, July 23: Cardiff and County Horticultural Society's show (2 days); Morley and District Paxton Society's meeting. Thursday, July 24: Royal Botanic Society's meeting. Friday, July 25: Whitehall and District Horticultural Society's show (2 days). Saturday, July 26: Derbyshire Gardeners' Horticultural Society's show; Falkirk Rose Show; Springfield (Fife) Flower Show; Newburgh and District Flower Show.

"Gardeners' Chronicle Seventy-five Years Ago.—*Frost in June.* Looking out of my chamber window about four o'clock in the morning of the 9th of June, I perceived the whole country white with hoar frost upon further examination I found ice, nearly one-fourth of an inch thick upon standing water. The effect of this frost upon some of our hardy forest trees was remarkable: the leaves of the young Oak, Ash, and Sycamore were turned black, but the old trees of the same kinds suffered less; the Beeches put on their autumnal livery, and the points of the young shoots of the Larch were turned into a brownish-yellow; also the Potatos which were above ground, together with Dahlias, were very much blackened and cut down. While this havoc was committed upon our native forest trees, a few half-hardy exotic plants remained unscathed; these consisted of Fuchsias and Calceolarias, and were only planted out a week or two previous to the occurrence. A China Rose growing vigorously beside them was killed down to the old wood, but with this exception I could perceive no effect upon Rose trees, not even on those marked "rather tender" in Mr. Paul's catalogue. I was surprised that the Nasturtium and Tropaeolum canariense were not injured, for I have often observed that a slight degree of frost in autumn was sufficient to kill these beautiful climbers. At the time this frost occurred the wind was north-east.—*Wm. Wallace, Hillersdon Terrace, Nenthead, Penrith. Gard. Chron., July* 21, 1849.

Publications Received.—*The Cultivation of New Zealand Plants.* By L. Cockayne. Whitcombe and Tombs, Ltd., 9, St. Andrews Hill, E.C.4. Price 4s. 6d. net. *The Warley Garden in Spring and Summer.* By Ellen Willmott. Illustrations. Second Edition. Wheldon and Wesley, Ltd., 2, Arthur Street, New Oxford Street, W.C.2. Price 10s. 6d. net.

HARDY FLOWER BORDER.

VERONICA REPENS.

As a carpeting or edging plant, as a ground-work for choice spring bulbs, or simply for its own undeniable charm, this delightful little Corsican Speedwell should find a place in all gardens.

It is one of the easiest plants to cultivate, succeeding almost anywhere, covering the ground with a close-set sward of bright, full-toned green amid which nestle, the season through, the pale-blue, almost white flowers.

V. repens grows fast, and may be increased by merely detaching a rooted shoot and planting it. It also seeds abundantly in many gardens. We have V. repens growing in shade and full sun, in dry soil and in bog in our Welsh garden, and it appears to be equally happy under all these conditions. *J., North Wales.*

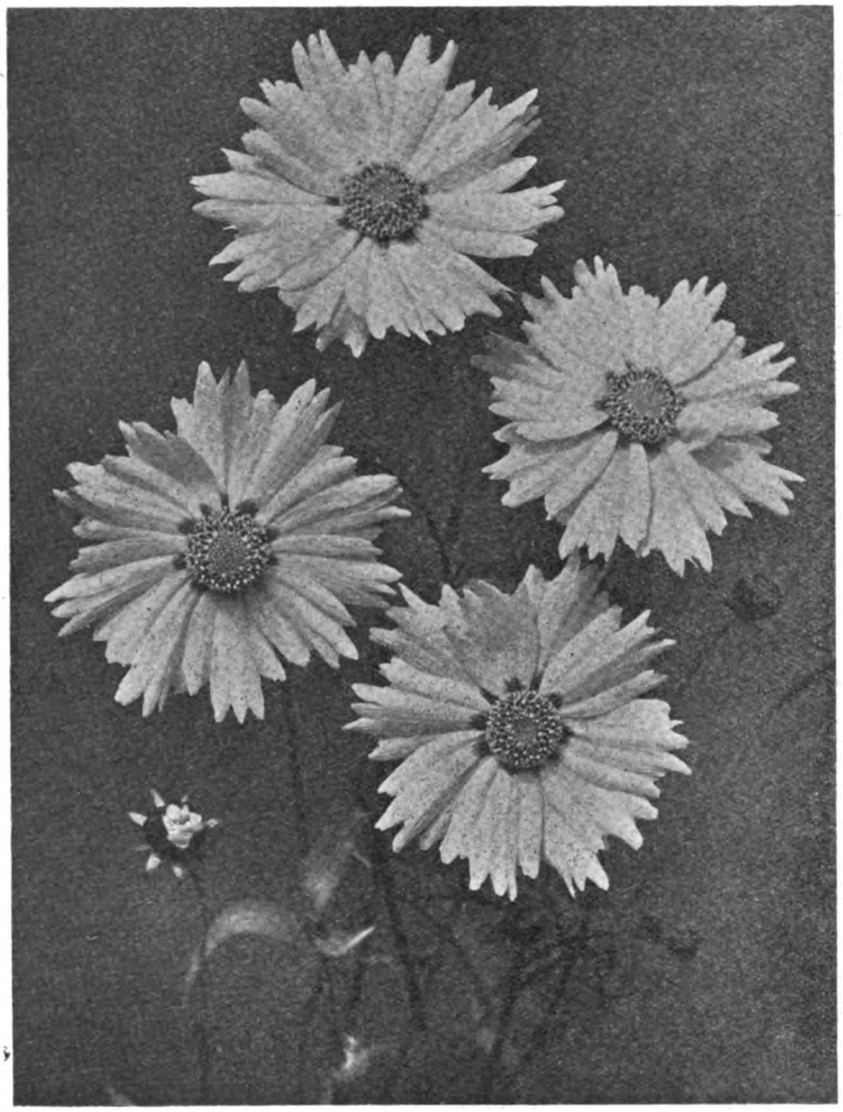


FIG. 13.—COREOPSIS AURICULATA SUPERBA.
R.H.S. Award of Merit, July 8.

COREOPSIS AURICULATA SUPERBA.

Our illustration (see fig. 13) represents a new form of Coreopsis auriculata which has been given the varietal name of superba because of its great improvement on the type.

The flowers are carried on long stems and are of rich yellow colour, the toothed, broad ray florets possessing a dark reddish-brown blotch at their bases.

It received an Award of Merit at the R.H.S. fortnightly show held on July 8th, when it was shown by Messrs. B. Ladhams, Ltd.

TREES AND SHRUBS.

ROBINIA PSEUDACACIA DECAISNEANA.

The usual colour of the False Acacia is pure white, but occasionally the flowers are cream or rose. The latter is the colour of the variety under notice. The tree is very uncommon in gardens, seeing that the ordinary white one, large as it is, may be seen in villa gardens, quite close to and in front of the houses. This may be due to the lack of selective power on the part of the owners, unless they depute the matter to the nurserymen. There are plenty of trees of the variety in nurseries, for many catalogues include it.

P. Pseudacacia Decaisneana appeared in France about 1862, so that there has been ample time for its increase. A few weeks ago I observed eleven trees, all rather closely planted together in a front garden at Surbiton. They were crowded and narrow, owing to the pressure of one upon the other, yet they were flowering freely. The trees were about thirty feet high, but would have been much finer, if only half the number had been planted in the space they occupied. *J. F.*

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart.,
Gatton Park, Reigate.

Epidendrum prismatocarpum.—As plants of this species pass their flowering period they should be given attention at the roots. Specimens that have become pot-bound and overgrown their rooting space should be taken out of their pots, the back pseudo-bulbs cut away, leaving only two or three behind each leading growth, and these placed several together in moderate-sized pans. Make the soil firm around the rhizomes, and arrange them so that two or three of the leading growths point to the centre of the pan, thus making a well-balanced specimen. Plants that do not require re-potting will be benefited by removing some of the old materials from the surface and top-dressing them. For a few weeks after re-potting keep the soil somewhat dry, but whenever moisture is applied give a thorough soaking, taking care that water does not lodge in the centre of the young growth. The plants grow well in the coolest and lightest part of the Cattleya house.

Cattleyas and Laelias.—Laelia purpurata, L. tenebrosa, L. Martinetii and others, together with such Cattleyas as C. Mossiae and C. Mendelii and their various hybrids that have been resting since passing out of flower should still be kept dormant for as long a period as possible. This is best ensured by placing the plants in the coolest and most airy part of the Cattleya house, and affording them a very limited supply of water at the roots. As soon as the plants show signs of fresh growth, any in need of fresh rooting materials should receive attention. These plants resent too frequent root disturbance, therefore in re-potting them it is well to employ pots of sufficient size to accommodate the plants for at least two seasons. In removing the plants from their pots care must be taken not to damage the roots; where they adhere very firmly to the sides, the pot may be broken and removed in small portions. Remove all unnecessary back pseudo-bulbs, for these weaken the plants and necessitate the use of larger receptacles. Employ a potting mixture of Osmunda-fibre broken up rather roughly, with a small quantity of Sphagnum-moss and crushed crocks. Pot rather firmly, placing the base of the plant just below the rim of the pot. After they are potted the plants should be afforded rather more shade for a time, and watered with very great care.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden,
Pyrford Court, Woking, Surrey.

Border Carnations.—It is important to make an early start with the layering of border Carnations to ensure strong plants for autumn planting, and so soon as suitable growths are sufficiently developed the operation may be commenced even if the flowers are not entirely over. The finest flowers are produced from plants propagated annually, though, naturally, for a mass of flowers, undisturbed plants are more effective though they become unmanageable after two years. Those plants intended for layering should be cleaned, have their lower leaves removed, and have a dressing of two or three inches of light, gritty soil placed around them. Select only strong, healthy growths, and cut a tongue as near the base as practicable by making a clean cut half-way through the stem immediately below a node, turning the knife upwards and continuing the cut to the next node. Bend the stem so that the tongue is inserted in the fine soil, and peg it firmly into position. Water the plant thoroughly with a fine hose, and keep it moist by overhead waterings until rooting has taken place. This will be in three or four weeks, when the layers may be severed from the parent plants and be left another week or two before replanting.

Hardy Heaths.—The present is a suitable time to propagate hardy Heaths, most of the species of which root readily from cuttings formed from the tips of partially ripened lateral shoots. They should be inserted very firmly in sandy soil under a bell-glass, or they may be inserted in pans or boxes and placed in a cold frame.

Shrubs.—Although many shrubs may be rooted from ripened cuttings inserted in the open in late summer and autumn, a large number may be more readily increased by striking partially ripened shoots at this season. Cuttings of Cistuses, Helianthemums, Daphnes, Veronicas and many others root freely if inserted in sandy soil and stood in a cold frame. Lavender, Cotton Lavender, Rosemary, etc., may also be rooted in the same way or even without the aid of a cold frame.

Roses.—Where bedding Roses are grown in quantity reserve stocks are usually raised in the home nursery, and the operation of budding will now call for attention. It should not be done, however, until the sap flows freely, which permits of the bark being raised readily from the wood. If both the stock and the tree from which the bud is taken are in this condition the union is readily effected. It is preferable to carry out the operation in calm weather as excessively drying winds are apt to dry the cambium and thus destroy the possibility of quick and complete union.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq.,
Carlton Park, Market Harborough, Leicestershire.

Fruit-Gathering.—Most of the small fruits have ripened, and should be gathered for preserving so soon as they are ready in fine, dry weather. Strawberries, especially, should be gathered as dry as possible, and not over-ripe, otherwise preserves made from them will not keep well. On the other hand, Black, Red and White Currants improve in flavour if allowed to hang until they are quite ripe. Gooseberries intended for making jam should be gathered just when the colour is developing, whilst Raspberries should be quite ripe for this purpose, but if required for bottling, they should be gathered when they are firm and approaching ripeness. They are much better to handle then, and will keep much longer. The same remarks apply to Loganberries and all allied fruits, nearly all of which make excellent preserves.

General Remarks.—Continue to stir the soil around all fruit trees and bushes now that the weather is warm and dry. Where time will permit of this work, the benefit to the trees cannot be over-estimated. Trees or walls should not be allowed to suffer for want of moisture. A hollow space should be made around the base of the tree to permit of copious supplies of water being applied to the roots. After watering the trees draw the soil back again, and apply a mulch of half-rotted manure. One good soaking at intervals will do far more good than light waterings every other day. Peach and Nectarine trees should be syringed with the garden engine every afternoon, using soft water for preference. Young Strawberry plants that have been layered should be kept well watered, and the ground around them kept free from weeds.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain,
Brocket Hall, Hertfordshire.

Tomatos.—Where it is desired to have a crop of fruits to carry on the succession well into the New Year a sowing should be made now. The seedlings should be raised in a little warmth to ensure the seeds germinating quickly. Immediately the seedlings can be handled they should be potted off singly into small receptacles and afterwards stood in a closed frame and shaded from bright sunshine until it can be plainly seen that they have become established in the new soil. At this stage they may be hardened gradually and grown in cool conditions. When it is found that they have filled their pots with roots they should be transferred to larger receptacles. With care in watering they may be placed direct in their fruiting pots, but the receptacles should be only half filled with soil. By this method there will be ample space for top dressing the roots on frequent occasions when they need more soil. It is not advisable to use a rich rooting medium, but after two or more trusses of flowers have set, a richer soil may be added when top dressing is found advisable. The plants may be grown out-of-doors in a sheltered position until the second or third week in September, by which time three or four trusses of fruit will have set.

Melons.—To ensure a crop of Melons late in the autumn a sowing may still be made. To be successful with this crop it is necessary to grow the plants in a light structure where plenty of top and bottom heat is available for use at a later date, when the fruits are maturing. For this sowing it is advisable to grow a quick-maturing variety and also a free setter. The seeds should be sown as advised in a previous calendar and the seedlings grown in a moderately warm temperature until such time as they are ready for planting out. The border prepared to receive the plants should not be more than nine inches in depth and about eighteen in width, but when it is found that the plants have well filled this portion with roots, and the quantity of fruits secured (which should only be two on each plant for the late crop) a little more soil may be added to the front to protect and encourage the development of new roots, as these will assist the plants to mature their fruits. A suitable compost consists of a mixture of good turfy loam, old mortar rubble, wood ash and a little bone meal. The soil should be made firm by ramming before the Melons are planted. Close the house early in the day with plenty of atmospheric moisture, but when the fruits are setting a drier atmosphere is to be recommended.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Hydrangea Hortensia.—The present is a suitable time to propagate these plants. The cuttings should be made of clean, short-jointed growths bearing three pairs of leaves, and the lower pair of leaves only should be removed. The cuttings should be inserted singly in small 60-sized pots, making the soil firm in the pots. Afterwards plunge them in a propagating frame in a greenhouse. The frame and the pots should have been prepared in readiness before the cuttings are taken from the plants in order to obviate, as far as possible, flagging. If they are kept shaded and occasionally sprayed, the cuttings will root in a few weeks, and so soon as the pots are filled with roots the plants should be transferred to slightly larger ones. They should then be afforded a position near to the roof-glass in a cool house or frame, where they will make steady and sturdy growth up to the autumn. It is essential that the young plants should be thoroughly ripened during the autumn. Throughout the winter they may occupy a cold frame from which severe frost is excluded. Plants treated thus should produce large terminal heads of flowers early next summer. Young plants which were rooted last year and have flowered this season should be cut back to a point several joints below the old flower heads and be given every encouragement towards making and maturing new growth before the autumn, to ensure the production of good flower heads next summer. One of the best amongst the newer varieties which has come under my notice is La Marne, a very fine sort, bearing large heads of flowers of a beautiful manure colour. President Truffaut is another good variety bearing flowers of a pleasing shade of blue with freedom.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney,
The Moat, Berkswell, Warwickshire.

Carrots.—Make a large sowing of early stump-rooted varieties of Carrots to produce a succession of young roots well on to the end of the year. Suitable roots for bottling may be drawn from this sowing. For this purpose work the ground well into a fine tilth and draw the lines, not too deeply, 12 to 14 inches apart. Use the Dutch hoe so soon as the plants can be seen in the lines. This will check weeds, and so soon as the seedling Carrots are large enough thin them to a reasonable distance apart.

General Remarks.—Any vacant ground should be cleared of weeds and rubbish, manured freely, and dug. Work the ground to a fine tilth by hoeing or by working it about with a pronged fork. Late Broccoli, Spring Broccoli, or Sprouting Kale may be planted. Other Brassica crops that have grown to a fair height should be hand weeded and the draw hoe used to draw plenty of soil up to the plants. This will keep them firm and upright and prevent the wind from blowing them about and damaging them. If Brussels Sprouts are on the tall side a stout stake should be placed to each plant. A sowing should be made of early Cabbage and a further sowing in about ten days, allowing 15 inches between the rows. As soon as seedlings of Endives and Lettuces are fit to handle, frames should be made ready for protecting the plants in rough weather. The sashes may be placed over them as needed. Further sowings of Lettuce should be made, selecting black-seeded varieties for winter use. Sow also Endive, Radishes, and Mustard and Cress.

INDOOR PLANTS.

EPACRIS.

These are among the most beautiful and useful of all winter and early spring flowering plants, and are most profuse in giving their blooms which last for a considerable time. They are evergreen shrubs from Australia, and were largely grown in this country forty to fifty years ago, but through some unaccountable cause they are almost lost to cultivation.

They are of easy culture, having more freedom of growth than what are termed hard-wooded New Holland plants, and produce a quantity of variously coloured blooms at a season when flowers are scarce. The colours of the flowers range from white, through rose shades to crimson whilst others have a combination of red and white, and pink and white, which makes them very attractive for all kinds of decorative purposes.

The plants are distinct in their general habit, the flowers hanging in graceful plumes from their slender shoots which gives a well grown plant an elegant appearance. The flowers, when cut, remain fresh in water for a considerable time. The Epacris are much less subject to attacks of insect pests than most other indoor plants. Sometimes thrips are troublesome when the flower buds commence to show, and if not destroyed at once cripple the flower and prevent it attaining its fullest size. Fumigating the house slightly on two or three occasions will destroy the insects and the flowers will open freely provided the insects have not obtained too strong a hold on the bud. Through the autumn and winter the roots should be watered with great care, as the plants are easily killed by over watering.

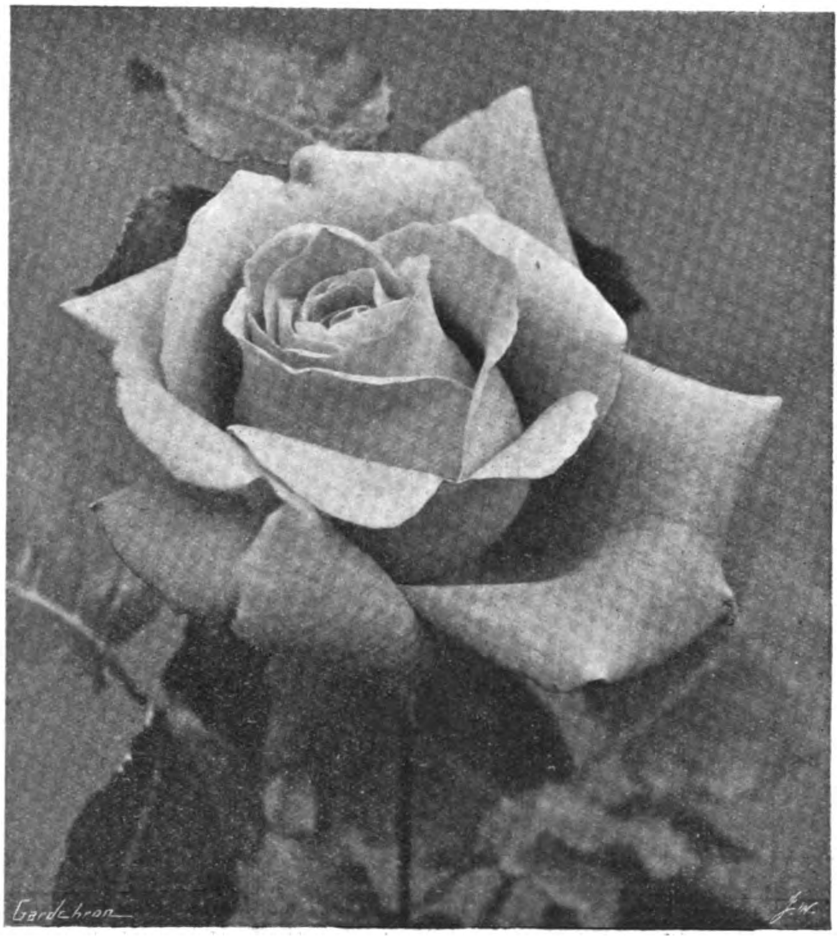


FIG. 14.—ROSE BEDFORD CRIMSON.

Awarded the Clay Challenge Cup for fragrance (see p. 20).

Cuttings one to two inches in length made of the young growths root readily in sandy soil under a bell glass in spring and early summer. To produce cuttings the plants should be cut back after flowering and kept moderately close until the new growth is strong enough to enable cuttings to be handled easily. The pots should be previously prepared and half filled with clean crocks, placing another layer of finer crocks above until the drainage material occupies two-thirds of the interior. Fill the pot with sandy peat in varying degrees of fineness, the rougher portions being placed over the drainage, and the finer material at the top and pressed down moderately firmly. Cover the surface with about half-an-inch of clean silver sand, make it level and press the sand: the cuttings should then be inserted and covered with a bell glass.

Many growers recommend giving the sand a good watering before inserting the cuttings, but the old professional propagators of hard wooded plants, sixty and seventy years ago did not approve of that method. Make a hole in the sand with a small dibber, and as the hole is made with one hand, place the cutting down by the side with the other hand, withdrawing the dibber to allow the dry sand to fill the hole; the cutting thus becomes firm. Give the cuttings a liberal watering to settle them firmly. A 48-size pot is suitable with a bell-glass to fit over it nicely. Set the pot in a close pit or frame with a very slight heat, shade the cuttings from bright sun, and each morning and evening wipe the condensed moisture from the bell-glass.

Be careful not to allow the cuttings to flag and if properly attended to they will soon form roots. Keep the cutting pots through the winter in a temperature about 50°. In March shift the plants into small pots and keep them close in a small frame or pit until they are established, then harden them off by degrees and transfer them to larger pots as required. Epacris do well potted firmly in good fibrous peat mixed with a small quantity of light, turfy loam and silver sand. When the plants are growing strongly use plenty of drainage; pieces of charcoal, and sandstone are valuable for keeping the soil open. The plants, when strong enough, may be set out-of-doors well protected from the summer sun; if plunged in a bed of ashes drainage should be well secured by setting the pots on bricks. They need an abundance of air during the winter. The following varieties offer a good selection and all are worthy of cultivation: alba odorata, Eclipse, Rose Perfection, hyacinthiflora, candidissima, Jubilee, Delicata, The Premier, Devoniana and rubra superba. *John Heal, V.M.H.*

ORCHID NOTES AND GLEANINGS.

CATTLEYA NORMAN.

The first flower of a very pretty cross between Cattleya Cooksonii (Hardyana × Trianae) and C. Warscewiczii is sent by C. J. Lucas, Esq., Warnham Court, Horsham (gr. Mr. Crump). In size and general characters it is nearest to C. Warscewiczii, but the influence of C. Trianae is very marked in the lip. The sepals and broad petals are rosy-mauve and the lip bright violet-purple, with Primrose-yellow disc and some purple lines from the base to the centre.

ODONTOGLOSSUM SOUVENIR PANTIA RALLI.

A very showy and distinct flower of a cross between O. Souvenir de Victor Hye (Harryanum × luteo-purpureum) and O. ardentissimum xanthotes and named in memory of the late Mr. Pantia Ralli, with whom Odontoglossums were special favourites, is sent by C. J. Lucas, Esq., Warnham Court. The flower is of the largest type, the broad sepals and petals having the large violet-purple blotches well shown by broad transverse bands of silver-white. The bases of the petals are white with dense spotting of purple, and the lip, which is broadly ovate, has on a Primrose-yellow ground two large purple blotches in front of the yellow crest, and numerous irregular purple lines on the sides.

LAELIA ANCEPS.

In 1909 I had charge of a small collection of Orchids in Lancashire, which included about fifty Mexican Laelias. Up to then the plants had not bloomed at all well, yet the pseudo-bulbs were large and plump, and the general appearance was that of good health. The plants were grouped at the end of a lean-to house, the chief other occupants being winter-flowering Cypripredium, and no doubt the shading essential to the latter did not suit the Laelias. Having just left a garden where Osmunda and Polypodium fibre were being substituted for peat for most Orchids, it was decided to grow these plants in a mixture of both materials. When new roots were in evidence the following spring the fibres were accordingly substituted for the peat they were growing in, care being taken to disturb the roots as little as possible during the process. The east end of the same house was then cleared; it had a southern aspect, and all the plants were suspended from the roof about two feet from the glass.

No shading of any description was ever employed over that portion of the house. the sun, what little there was that summer, shining full on the whole.

The usual care was exercised in watering the plants until the new roots had become well established, but afterwards the pans were dipped in water and the syringe was employed freely overhead whenever the weather was warm.

In the absence of sun-heat the temperature averaged about 55° during the day with a gentle circulation of air. The results at the end of the season were not unsatisfactory; a few more plants flowered than the previous year among the coloured varieties, but the white forms failed as they had previously done

From the end of the growing season until March the plants were given a good rest, water only being afforded to keep the growths plump. The compost was never disturbed. The following summer, 1911, will be remembered for its hot weather. All warm house Orchids revelled in the heat, and those under discussion as much as any. As before no shading was used, but from June to September the roots were kept well supplied with water and the syringe was used three times during the hottest days. The treatment proved successful. Nearly every new growth flowered, whites included, the first time in five years, it being that length of time since these plants had been secured from a famous collection in the south. From then up to the death of the owner five years later the plants never failed to bloom annually in December, and the white varieties in January.

In addition to the type and its white variety alba, the foregoing treatment was successful with a few others, chief amongst them being L. anceps Chamberlainianum, perhaps the finest of all dark forms, and L. a. Amesiana Crawshayana, specially notable for its deep velvety maroon lip. The best whites were L. a. Sanderiana, L. a. Stella, and L. a. Dawsonii. *Grower.*

NEW HYBRID ORCHIDS.

(*Continued from June 28, p.* 396.)

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Milo	C. Gaskelliana × B.-C. heatonensis	Stuart Low.
Brasso-Cattleya Tournai	B.-C. Mrs. J. Leemann × C. Dietrichiana	Sanders.
Brasso-Laelia Saundersii	L. tenebrosa × B.-L. Digbyano-purpurata	Stuart Low.
Brasso-Laelio-Cattleya albanensis	B.-C. Mrs. J. Leemann × L.-C. bletchleyensis	Sanders.
Brasso-Laelio-Cattleya Ceres	B.-C. heatonensis × L. Iona	Stuart Low.
Brasso-Laelio-Cattleya Charleroi	B.-C. Marguerite Fournier × L.-C. Gottoiana	Sanders.
Cattleya Furnes	Mossiae × Dupreana	Sanders.
Cattleya Heyst	Percivaliana × Suzanne Hye	Sanders.
Cattleya Norman	Cooksonii × Warscewiczii	C. J. Lucas, Esq.
Cattleya Roulers	Schröderae alba × Suzanne Hye	Sanders.
Cattleya Thorout	President Wilson × Hardyana	Sanders.
Cattleya Zeebrugge	Mulleri × Suzanne Hye	Sanders
Cypripedium Mildred	bourtonense × Christopher	Stuart Low.
Cypripedium Puck	Leeanum Gratrixiae × Armistice II.	Mrs. Bruce & Miss Wrigley.
Cypripedium Wintergreen	Zeno × Mastersianum	Mrs. Bruce & Miss Wrigley.
Dendrobium Mary Caine	Royal Sovereign × Euryalus	Sir J. Colman.
Laelio-Cattleya Alfred	C. Enid × L.-C. Mrs. J. J. Holden	Stuart Low.
Laelio-Cattleya Amiens	C. Suzanne Hye × L. Jongheana alba	Sanders.
Laelio-Cattleya Demeter	G. S. Ball × highburiensis	Mrs. Bruce & Miss Wrigley.
Laelio-Cattleya Louvain	C. Rex × L.-C. Endymion	Sanders.
Laelio-Cattleya Namur	C. Fabia × L.-C. Avies	Sanders.
Laelio-Cattleya Plumiecocq	L.-C. Herscentiae × C. Enid	Stuart Low.
Laelio-Cattleya Termonde	C. Trianae × L.-C. J. F. Birkbeck	Sanders.
Laelio-Cattleya Tirlemont	C. Hardyana Royal Sovereign × L.-C. Britannia	Sanders.
Laelio-Cattleya Wilfred Frost	St. Alban × Martinetii	Sanders.
Odontioda Egbert	Oda. Zephyr × Odm. Pescatorei	Stuart Low.
Odontioda Helena	C. Noezliana × Odm. Dusky Monarch	Charlesworth.
Odontioda Iduna	Oda. Chantecler × Odm. illustrissimum	R. Gerrish, Esq.
Odontioda Modasa	Odm. Pescatorei × Oda. Joan	Charlesworth.
Odontioda Rhoda	Oda. Charlesworthii × Odm. Aglaon	Charlesworth.
Odontioda Sylvana	Oda. Chantecler × Odm. amabile	Charlesworth.
Odontioda Vivian	Oda. Harryanum × Oda. Zenobia	Charlesworth.
Odontioda Zena	Oda. Devossiana × Odm. Pescatorei	Cowan.
Odontoglossum Emily	warnhamense × illustrissimum	Mansell & Hatcher.
Odontoglossum Evana	Penelope × Gorizia	Charlesworth.
Odontoglossum Italia	Gorizia × Aquitania	Charlesworth.
Odontoglossum Lenore	Ossulstonii × Lambeauianum	Mansell & Hatcher.
Odontoglossum Promuria	promerens × Vulturia	P. Smith, Esq.
Odontoglossum Souvenir Pantia Ralli	ardentissimum xanthotes × Souvenir de Victor Hye	C. J. Lucas, Esq.
Odontoglossum Talana	eximium × Mirabeau	McBean & Cowan.
Sophro-Laelio-Cattleya Firefly	C. Empress Frederick × S.-L.-C. Marathon	Sanders.

PALMS OF THE RIVIERA.

The most commonly cultivated Palms for room decoration, because of their great resistance to unfavourable conditions, are the Kentias, generally known under the name of Kentia Forsteriana, and to a much smaller extent, K. Belmoreana. These two very well-known Palms were many years ago placed in a separate genus by the late Prof. O. Beccari, under the name of Howea. The Palms retained in the old genus Kentia are all hot-house species of which none can be cultivated in rooms nor in the open on the Riviera.

The correct names of the two species in question are Howea Forsteriana and Howea Belmoriana. Like the Palm mentioned in my last article, Archontophoenix Cunninghamii, these resisted the cold weather in my garden up to the great frost of December, 1920, but were then killed, except for a few plants which even now have not quite recovered.

Every plant lover knows Howea Forsteriana; it is exceedingly common, being used for indoor decoration, for exhibitions and indeed for any use to which a decorative Palm can be put. But usually only in the glasshouses of botanical gardens are to be seen such large and splendid specimens as are found in some Riviera gardens and of which some of the largest are in my own garden. When this Palm reaches a height of some six to eight metres it is indeed of wonderful beauty with its quite smooth and shining green-tinged stem, absolutely straight and slender and its crown of most gracefully bending pinnate leaves of some four metres in length. Even in some gardens of Nice, more sheltered than mine, this Palm did not suffer in the great frost and as was the case with nearly all plants, east of Nice it did not suffer at all.

It is astonishing that a Palm of such very great beauty and to be found everywhere offered at a very moderate price should have been so sparsely planted on the Riviera, and I cannot advise too strongly its planting. It will grow in the full sun, but does rather better in half shade. Howea Belmoreana is a much less quick growing and less ornamental species, but it is well worth cultivating.

I may here mention two other Palms, found like the two foregoing on the little Lord Howes' Island and nowhere else. They are the splendid "Curley Palm," Hedyscepe canterburyana, a tall very beautiful Palm, which is more prosperous on the Riviera than the foregoing: and the small Clinostigma Mooreanum. Both have pinnate leaves and their hardiness is comparable with that of the Howeas. Two well-known Palms are known as Kentia sapida and Kentia Baueri, or Areca sapida and Areca Baueri, but the correct names are Rhopalostylis sapida and Rhopalostyle Baueri. The first is the hardier, being a native of New Zealand; it has a smooth, green trunk and very erect, pinnate leaves and may attain to a height of ten metres; the other is a native of Norfolk Island and New Caledonia and sometimes grows to a greater height. It is far more beautiful than the other and is, indeed, one of the most beautiful of Palms, but it is very rarely met with on the Riviera, though it is about as hardy as the Howeas.

Some Palms grew in my garden and resisted the cold, and though I cannot guarantee their identity, I think they were Kentioptis macrocarpa, and Microkentia gracilis, but they were both killed by the great frost.

I now come to a genus of exceedingly graceful small Palms which flourished here until 1920, but were then nearly all killed to the ground. Only those species which produced suckers from the base have recovered. I especially refer to Chamaedorea, of which I had through long years of patient efforts brought together some fifteen species. The most commonly grown is perhaps Chamaedorea elegans. The effect of a group of this Palm, with its very slender stems bending in all directions, is surprisingly beautiful, its pinnate, light green leaves being quite soft and tender. One species of this genus, Chamaedorea bambusoides has the exceedingly rare character in Palms of producing branches. These branches arise from the axils of every leaf on its very slender stems and may be used as cuttings; they will take root freely. The height of the different species of Chamaedorea varies from one to four metres and all without exception are of most extraordinary grace. They require to be cultivated in shade or half shade and should receive an abundance of water.

In one garden of Menton-Garavan, the most sheltered part of the Riviera, grew, flowered and fruited a species of Caryota, the so-called Fish-tail Palm, which is distinguished from most other Palms by its doubly compound hairs, the leaflets resembling those of the well known Maidenhair Fern.

I have tried many other species, of which some grew well for years, but only one, of whose identity I am not sure, was comparatively prosperous. It was, like so many other tender plants, killed by the great frost. There exist two or three species from South Africa and from Queensland which ought to grow here, but though I have tried again and again I have not been able to obtain them.

The graceful little apartment Palm so well known under the name of Cocos Wedelliana (but the correct name is either Syagrus Wedelliana, or Syagrus insigne) grows in the most sheltered parts of the Riviera, as also do Acrocomia Totai, Astrocaryum mexicanum and very many other Palms, indeed more than fifty species have proved more or less successful in my garden for years and would undoubtedly thrive in more sheltered gardens of the Riviera, if anyone would take an interest in them. *Dr. A. Robertson Proschowsky, Jardin d'Acclimatation, Les Tropiques, Nice, France.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

Calceolaria chelidonioides is a another welcome colonist in our borders. It is an annual species but takes care of itself by scattering innumerable seeds. The only attention required for its well-being consists in timely thinning of the crowded seedlings, a bit of work essential for the proper development of all annuals, and too often neglected. Rightly treated in this respect this pretty Calceolaria will grow a foot high, beginning to put forth its lemon-yellow flowers early in July and continuing the display till the first frost. The bright green, pinnatifid leaves are opposite, and under a lens will be seen to be set on the upper surface with a number of curved, transparent hairs, the function of which it is not easy to determine. I do not know how it got into our borders, probably the seeds arrived with some other plant. Now that it is established we should be sorry to lose it.

Of loftier growth than the Calceolaria is another annual — Papaver umbrosum — which comes up self-sown and flowers in profusion in July. In all the wide range of colour displayed by the race of Poppies it is only in one of the varieties of P. orientale that a match can be found for the intense blood-red of this species. The richness of the blossom is enhanced by a great sable blotch at the base of each petal, as lustrous on the reverse as on the inner surface. Black also are the anthers and filaments crowded round the pale green ovary.

A flower garden without birds would miss much of its charm, wherefore it may be well to note that plenty of wood Forget-me-not—Myosotis sylvatica—ensures the presence of plenty of finches. Goldfinches, especially, though they rear their young on a diet of grubs and insects, are chiefly vegetarian in after life, and so soon as the nestlings can fly, it is pretty to see the parent birds leading them to pasture on the seeds of the Forget-me-not. The plant itself is not apt to disappear after getting established, for it sows itself very freely where the soil is cool and fairly moist. Two broods of goldfinches were reared within the flower garden this season, while in the wood immediately outside it were three nests of woodcocks, which are regular nocturnal visitors to the borders. A few nights ago one was detected in the gloaming close under the library window, poking his long nose among the plants in search, it is to be hoped, for slugs.

Our summer has been inclement till near the middle of July, but Lilies are all that could be desired. Botrytis has not yet shown its ugly stain except, strange to say, on one clump of L. monadelphum. Strange—because in all the genus there is none heartier than this fine Caucasian species. Were I asked to name the easiest and safest Lily for a 'prentice hand to begin with, I might perhaps name the form of L. davuricum, called Incomparabile, forasmuch as the bulbs thereof do not suffer from being stored dry; but freshly-raised bulbs of L. monadelphum give a surer return for permanence than almost any other Lily if they are planted in stiffish loam, with or without lime. At its best, it is a noble plant. I measured a stem this morning five feet nine inches high, bearing nineteen blooms.

It puzzles one to understand why bulbs of the white Martagon Lily continue to be advertised at so high a price as 3s. 6d. each, for this Lily is easily raised from seeds which are produced in profusion, and I have found that fully seventy-five per cent. of the seedlings come true. I shall be happy to save seed for anyone who wishes to propagate this beautiful Lily and will send me a stamped, directed envelope.

Among novelties worth noting (and many novelties must be noted only for avoidance, *e.g.*, Salvia Pzrewalskii), the Chinese Phytolacca clavigera is desirable for the back row of a border, or for a woodland where rabbits come not. In vigour and general habit it is very like the Virginian Pokeberry, but the flowers are bright pink instead of white, set in a close spike with a vivid green ovary in the middle of each.

Another and lowlier Chinese plant deserves, though not a novelty, to be more often planted than it is—to wit, Chelidonium Franchetianum, which forms a rich rosette of finely marbled, pinnatifid and crinkled leaves and bears clear yellow flowers, two inches across, in July. To do this handsome Celandine justice, it should be set in good, deep soil. The leaves carry beads of rain or dew throughout a hot summer day.

Among the so-called Syringas, Philadelphus microphyllus deserves honourable mention for the delicious scent of Pineapple which it diffuses to a considerable distance. The flowers are small but numerous, set in graceful thyrses, and make a pretty picture when Tropæolum speciosum threads the bush with its scarlet bloom. *Herbert Maxwell, Monreith.*

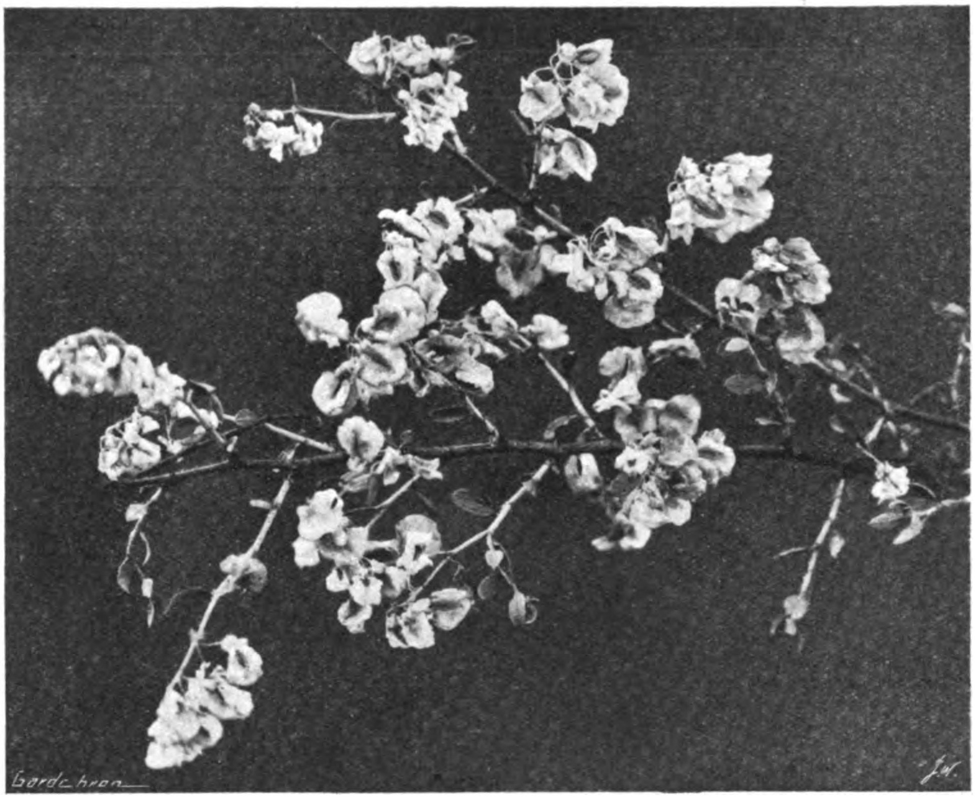


FIG. 15.—ATRAPHAXIS BILLARDIERI.

PLANTS NEW OR NOTEWORTHY.

ATRAPHAXIS BILLARDIERI.

This very pretty Polygonaceous shrub is a native of Greece and The Levant and is in cultivation in the rock garden at Kew, but does not appear to be common in gardens. It is of semi-prostrate habit and enjoys a sunny situation. The deciduous leaves are very small and the attractive, rose-coloured flowers, which remain beautiful for a long period, are produced in numerous racemes of so many as eight flowers. The perianth segments are five in number, the two outer ones being slightly smaller and reflexed, while the three inner ones are reniform in shape. They are delicately tinged rose-pink shading to green about their centres.

Atraphaxis Billardieri is by no means a new plant, for it was discovered by La Billardiere about 1787, but was not described until nearly sixty years later. It is figured in the *Bot. Mag.*, t. 8820. At the meeting of the Royal Horticultural Society on the 8th inst., the plant received an Award of Merit.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard, 1543.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

THE CLASSIFICATION OF FLOWERING PLANTS.

(*Concluded from p. 9.*)

HUTCHISON'S papers* have so far dealt with (1) the principles of classification he adopts, (2) the Ranunculaceae, (3) the Winteraceae treated as a separate family from the Magnoliaceae, (4), the Fumariaceae which he elevates once more to family rank, (5) the Anonaceae, and now with the proposed new arrangement of the Archichlamydeae. If I understand the author aright he is putting forward these in a preliminary tentative fashion in order to invite helpful criticism in the hope that the complete work, when it appears, will benefit thereby. Consequently, all those interested in classification and the evolution of the flower should peruse his papers as they appear with a critical eye and endeavour to find weak spots in his armour. The writer is in such general agreement with his views that any criticism that may follow is of a minor character and given with hesitation, as he can lay no claim to detailed knowledge of many of the families considered.

Hutchinson is a "splitter" so far as families and orders (cohorts) are concerned. In his hands these became more natural and less unwieldy. For example, he raises the Leguminoseae to the rank of order, and its three long recognised divisions, the Mimoseae, Caesalpineae and Papilionaceae to that of family. Surely a step in the right direction. A pity the Rosaceae could not be dealt with similarly.

The paper treating of the Ranunculaceae (*Kew Bulletin*, 1923, p. 65) is a valuable, terse, and readable account of this attractive family, many members of which are such delightful inmates of our garden. His derivation of Clematis from Anemone through Clemotopsis, a small African genus, is of distinct interest; for if accepted, and it seems reasonable, we have here a herbaceous genus giving rise to a woody one—an exception to the present belief of most botanists that herbs have come from trees. He rightly isolates Paeonia, but does not go further than affording it tribal rank. Might it not be worthy of sub-family if not full family status? He himself states, "the best position for the Paeonieae remains a problem" (p. 76). His table of relationships (p. 78) calls for some critical comments. The placing of Eranthis (Winter Aconite) at the head of the Apetalous branch from the Hellebores is surely an oversight. This genus is as petalous as Helleborus itself. Caltha (Marsh Marigold) is so put as to suggest that it has lost its petals (honey leaves). It may quite well never have had any. It is difficult to see why the small genus, Oxygraphis, should occupy an isolated position. Might it not find a place close to Ranunculus?

Coming to his latest contribution (*K.B.* 1924, p. 114), with the scheme for the arrangement of all the Dicotyledonous families below the Sympetalae, his first innovation and one that appears sound is the splitting of the old cohort, Ranales, of Engler into four, two of which are considered basal, the Magnoliales (trees) and the Ranales (herbs) now used in the restricted sense. He shows by an ingenious table (p. 118) how these two basal groups have both contributed towards the Polypetalae and Apetalae. On the whole, the arboreal habit has been retained in the Magnolian lines of evolution, though herbs evolve ultimately as, *e.g.*, in the Papilionaceae and Malvaceae. On the other hand, the herbaceous habit predominates in the Ranalean lines of evolution, though tree forms appear here and there. Now this is quite stimulating to plant anatomists. The wood of shrubs and trees which have evolved from herbs may be expected to show structural features distinct from the wood of trees which have come from ancestors primitively arboreal in habit. Clematis has already been pointed out as a woody genus that probably had a herbaceous origin. Berberis is another instance. But a case for example which may require greater proof before it will be generally accepted occurs in the family, Lythraceae. Presumably we are to infer that Lagerstroemia, a genus of fairly lofty tropical trees, has had a herbaceous origin and is higher in point of evolution than, say, the Purple Loosestrife (Lythrum). On the face of it the opposite would appear more likely; but doubtless Hutchinson has good reasons both for suggesting that in this circle of affinity the herbaceous habit is becoming increasingly woody, and also for moving this family and its associates, such as the Onagraceae, far from the Myrtales within which cohort it is placed both by Engler and Bentham and Hooker. If this new way of deriving the higher Dicotyledons in two distinct branches, the one arboreal and the other herbaceous, from basal groups be proved phylogenetically sound; then one cannot help exclaiming that after all there was a grain of truth in that oldest of all classifications, viz., into trees, shrubs, and herbs!

As regards the chief dispute of recent times—the position to be assigned to the catkin families, the so-called Amentiferae, the Oak, Beech, Birch, Hazel and the like, it is pleasing to see that Hutchinson accepts the view which has been expressed by Hallier and others, of their probable relationship to the Rosales in the wide sense and to the Hamamelidaceae in particular. The trees and shrubs composing this latter family taken *tout ensemble* are certainly suggestive of being in some degree forerunners of our catkin trees. Further, though Hutchinson has not referred to it, one may here draw attention to the possible connection of the Hamamelidaceae to that part of his Magnolian basal group represented by the Trochodendraceae. In fact there may be some uncertainty as to whether it is not a little artificial to include this small family, as well as Cercidiphyllum, in the Magnoliales. These genera, besides being apetalous, differ from most of the other Magnoliales by the fact that they have no oil receptacles in their leaves. Possibly a separate cohort could be made of such genera as Trochodendron, Eupteles, Cercidophyllum and, perhaps, Tetracentron leading up to the Hamamelidaceae.

One is rather surprised to find the Myristicaceae (the Nutmegs) removed from their position close to the Anonaceae and placed instead with the Lauraceae. The presence of the ruminate endosperm strongly suggests that Myristica is a greatly reduced Anonaceous form.

The new position given to the Calycanthaceae calls for criticism. It is placed near the Rosaceae. The aromatic character of these shrubs together with the great number, arrangement, texture and coloration of the perianth members suggest a Magnolian relationship; and one doubts whether the perigynous structure of the flower and the lack of endosperm are sufficient in themselves to permit of the detachment of this small group from the Ranales, where it found a place both in Bentham and Hooker's and Engler's systems. In fact it would seem that the Magnoliaceae, Anonaceae, Myristicaceae, Calycanthaceae, Monimiaceae and Lauraceae constitute a fairly closely related group of aromatic trees and shrubs. This assemblage of plants in fact supplies our chief spices.

In each order (cohort) the families are arranged in linear sequence, and presumably the family with the less advanced flower precedes that with the more modified. If so it may be a mere slip to find the Piperaceae preceding the Saururaceae. The free carpels occurring in some forms of the latter would suggest its occupying the primitive position in the Piperales.

Hutchinson, like systematists before him, is puzzled as to the position to be assigned to the Cactaceae. He thinks they are best placed near the Cucurbitales, though recognising the possibility of their relationship to the Ficoidaceae (Mesembryanthemum, etc.) My own inclination leans towards the latter view of their affinity.

One paper of the series (*K.B.* 1924, p. 49) has not yet been mentioned. It deals with the Gymnosperms and here the reviewer feels he must lodge a mild protest against including among the Flowering Plants this very different and heterogeneous group. Perhaps this paper may be looked upon as slightly perfunctory, though it is useful to have brought before us vividly all the Coniferous genera, since some are of recent creation. It may be questioned whether the table of approximate relationships (p. 62) adequately represents up-to-date opinion. No views are expressed regarding the Gnetales. It would be interesting to have Mr. Hutchinson's opinion on these perplexing genera. The taxonomic rank of family is only bestowed upon the main divisions of the Gymnosperms. Surely they are entitled to something higher than this. If the Gymnosperms are to be included in the complete work then it may be suggested that in the title the words "Higher Plants" be substituted for "Flowering Plants." This latter term has been used so frequently as synonymous with that of Angiosperms that it would be misleading to widen its meaning. Besides, the Angiosperms can be treated as a natural (monophyletic) group, but not so the Gymnosperms or, at any rate, not [in the same degree.

The method Hutchinson has so far followed in dealing with the families individually is on novel and attractive lines. A feature is made of geographical distribution, and by the help of maps the distribution of many of the genera, especially those occupying restricted areas is brought graphically before the reader. Numerous points of interest and suggestion run through the letterpress. Also he makes himself particularly clear, so there is no mistaking his meaning, however one may be inclined to agree with or differ from him. Thus one feels that in one quarter, at any rate, the dry bones of systematic botany are bestirring themselves and taking flesh, and that the study of the flower, one of nature's fairest creations, is coming once more into its own. *John Parkin.*

---

* See *Kew Bulletin* from 1921 upwards.

PYRFORD COURT, WOKING.

(See Supplementary Plate).

PYRFORD COURT, the residence of Viscount Elveden, M.P., is situated in the most beautiful part of the Surrey Pine country, a few miles from Woking and not far from the Royal Horticultural Society's Gardens at Wisley. Those of our readers who have visited Wisley will remember how delightful the natural scenery of this part of Surrey is and at Pyrford Court it is even more beautiful than at Wisley, for the land is more undulating. Both the garden and residence of Pyrford Court are new—there was not even a shed on the place in 1907. The gardens are exceedingly interesting and the lake in the lower part of the grounds planted about with hundreds of thousands of Iris Kaempferi (Fig. 16) is alone worth making a long journey to see—and visitors would doubtless be heartily welcomed, for both Viscount and Viscountess Elveden are keenly interested in gardening. Views of some of the finest scenery in Surrey are obtainable from the terrace in front of the house, across the Merrow Downs to the "Hog's Back"—some ten miles distant. The natural vegetation has been allowed to remain on the south side with a few groups of Rhododendrons, Azaleas, Japanese Maples and Penzance Briars introduced at appropriate spots, and in the spring the whole is ablaze with thousands of bulbous flowers.

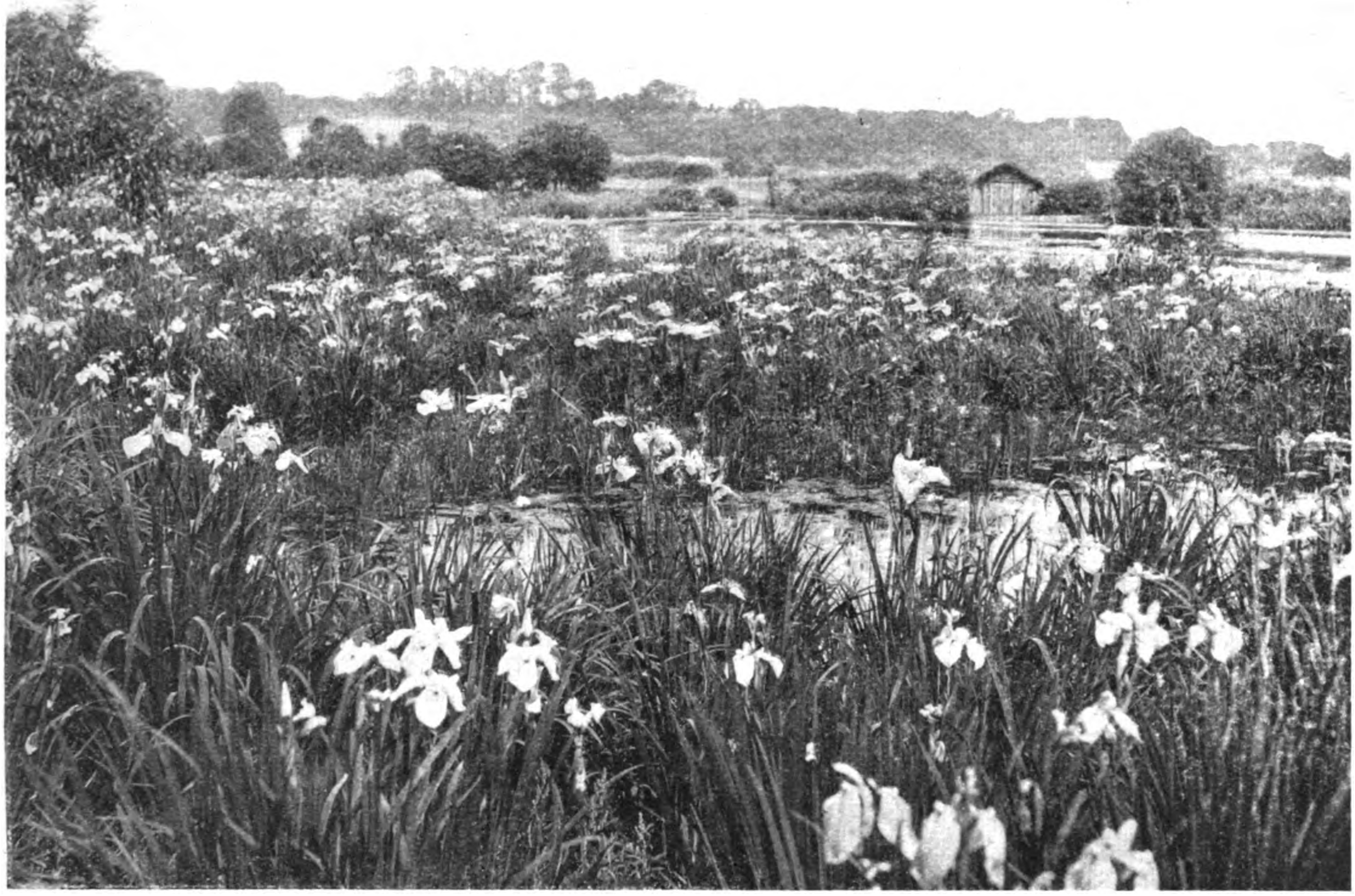


FIG. 16.—IRIS KAEMPFERI ON THE LAKE-SIDE AT PYRFORD COURT.

The dressed gardens are principally on the north side and it is here that the pretty little enclosed garden with Lily-pool shown in the supplementary plate is situated. The Lily-garden is enclosed by a Holly hedge and the banks inside the hedge are planted with Sweet Briars. On the opposite side, growing underneath trees, is a border of Funkias which thrive exceedingly well in this shady spot. As will be seen on reference to the supplementary illustration, most of this little water garden is paved and topiary specimens are placed at the corners of the pool. The steps lead to a pergola which is made of stone supports carrying Oak beams. This is a very beautiful feature and includes two distinct portions, forming two arms at right angles to each other. The pergola is furnished with a variety of flowering plants, including many Roses that give a gay air to this spot in summer. The pergola forms the boundary of a very large area of lawns enclosed on the north side by a high wall which is planted with a variety of rare and interesting shrubs, and half-way along the wall is a summer-house, which may be just seen above the steps. A row of Irish Yews in the grass, some distance from the wall, is a very fine feature, and between these Yews and the wall are beds of flowers, principally Roses and Delphiniums. Most of the Delphiniums are seedlings raised by Mr. W. Auton, the gardener, and they are quite equal to the best-named sorts. The warm wall, sheltered by large trees on the north side, is the home of such interesting plants as Garrya Thuretii, G. elliptica, Akebia quinata which has grown to the top of the wall Carpenteria californica, which has made a very big plant and at the time of my visit was a mass of flowers; Cydonia coccinea, carrying a big crop of its large fruits that are useful for the making of jelly; Grevillea rosmarinifolia, which has been in bloom since Christmas; Punica Granatum, the Pomegranate, which was bearing its interesting flowers that have thick sepals and scarlet, leathery petals packed inside with stamens; Diospyros Kaki, of which there are several big healthy specimens; Eriobotrya japonica, Cercis Siliquastrum, the Judas Tree; Viburnum macrocephalum, and Chimonanthus fragrans, which has set one or two of its pyriform-shaped fruit pods this season. The whole of the base of this wall is planted with Iris stylosa (syn. unguicularis) which flowers freely from November to March.

The interesting colour gardens, which have been referred to in this Journal before, lie to the east of the flower garden just described; there are five of them in the form of borders on either side of a grass vista, and separated from each other by appropriate hedges. The scarlet garden was scarcely at its best, for this is principally furnished with summer flowers which have not yet obtained their fullest development. The principal subjects employed are Verbena chamaedrifolia, Pentstemon Southgate Gem, Lychnis chalcedonica, Gladiolus Brenchleyensis, Kniphofia aloides, Verbena Cardinal, Helenium Riverton Gem, Nasturtium King of the Scarlets, Antirrhinums, Zinnias, Dahlia Fire King and Salvia Pride of Zurich. This particular garden is enclosed by a green Yew hedge. The next is the grey garden, for which mostly foliage plants are used and the hedge to this garden is of Cupressus Lawsoniana Triomphe de Boskoop. The flowers are mostly white or lavender coloured in this garden, which include groups of Yuccas, big clumps of Santolina incana, the Cotton Lavender, common Lavender, the beautiful Lyme Grass, Elymus arenarius: Echinops Ritro, Stachys lanata, Mrs. Sinkin Pinks, Nepeta Mussinii, Artemisia ludovaica, the common Globe Artichoke, which is very effective both in its foliage and its flowers: and Phlomis fruticosa, which has very fine grey-green foliage, but is too conspicuously yellow when in flower, for which reason it is to be shifted into the golden garden.

The golden garden is the feature of the place and is beautiful at all seasons of the year. It is divided from the grey garden by a hedge of golden Yew, which shows conspicuously against the darker Cupressus Lawsoniana Triomphe de Boskoop. Amongst the choicest of the golden plants are several magnificent specimens of Elæagnus foliomarginata aurea, and of Acer Negundo aurea.

The golden Conifers include Cupressus lutea, Retinospora pisifera aurea and Golden Yews. Big clumps of Golden Privet give a fine effect, and in the background are trees of Catalpa bignonioides aurea, Ulmus Dampieri, the Golden Elm, Holly Golden Queen, and both golden Box and golden Euonymus. The remaining colour gardens run at right angles to the golden garden, in the centre of which is an old stone seat with lead figures, probably of Italian workmanship. Amongst the flowers Evening Primroses are especially beautiful, and there were big plants in flower of Achillea aegyptiaca, Helenium pumilum, Iris ochroleuca, and, for autumn effect, Helianthus Miss Mellish and Rudbeckia Golden Glow.

A golden Holly hedge separates the golden garden from the blue garden, which is enclosed by a dark Yew hedge. The principal subjects in the blue garden are light and dark blue Delphiniums, which grow and flower magnificently, Linum perenne, Jasione perenne, Funkia ovata, Veronica rupestris, Anchusas, Thalictrum flavum, which is included for its glaucous foliage; Eryngium Oliverianum and the common Chicory, Cichorium Intybus, which grows eight to ten feet tall. Next is the green garden planted mainly with Ferns and shrubs. Of the herbaceous plants the chief are Pulmonaria officinalis, with spotted leaves, Acanthus mollis, Iris germanica, Bocconia cordata, Spiraea Aruncus and Paeonia Whitleyi.

There is another pergola at the end of the colour gardens made with Larch poles and furnished with Roses, and with a broad border on either side of Iris Kharput running the whole length. A brick and stone path down the centre leads to a little recess with a seat, in a wall. On the west side of this pergola is a border planted with Polyanthuses of the Munstead strain. There are also numerous other little gardens, each of which offers some new surprise. One, known as the "tank garden," has three Lily pools; the greater part of this garden is paved with red bricks. Several old tree stems have trained on them Crimson Rambler Roses making a Rose screen with a row of the dwarf Polyantha Rose, White Pet. Tubs and vases containing such subjects as Agapanthus, Hydrangeas, Fuchsias, and Francoa ramosa, are arranged around the pools and at other appropriate spots.

A path through the Rose screen leads to a little herb garden containing ten beds divided by paths made of red tiles set on edge. Each bed is planted with a separate herb and the borders around are also filled with herbs. This little garden is enclosed by a Holly hedge, and through a gateway is seen the golden garden in the distance. Other little gardens include a "medicinal" garden and a "June" garden, the principal feature in the latter being its bordering of a rose-coloured Pink with a crimson zone. This Pink has blooms as large as those of a perpetual-flowering Carnation. Mr. Auton discovered this variety growing in a cottager's garden but does not know if it is a named sort.

The rockery is made in a part of the natural Pine wood, which contains a few Oaks. The rock garden includes a stream by which stepping stones are placed. In addition to the great variety of Alpine flowers there are numerous fine Japanese Maples, Azaleas, and Rock Roses. Just in a clearing under the Pine trees is a colony of Lilium giganteum, the biggest specimens of which are some eleven feet high and bearing in two cases, so many as eighteen blooms each.

The lake and the Japanese Iris garden (Fig. 16) are situated some considerable distance away from the dressed quarters. The water is a natural lake formed by springs, and the banks, beautiful naturally, have been made even more charming by planting. The soil is ideal for the Irises, and consists of sandy bog-land almost waterlogged at certain seasons. Iris Kaempferi has no superior for rich colouring in the genus and the tones range from white through blush to mauve, violet, purple and blue. Some of the flowers are of broken colours, veins of white, blue-purple and other shades running through the standards and falls. The blossoms overtop the sword-like foliage which in itself is handsome all the year round. The Irises are planted informally and with them are associated a few other water-side subjects such as Spiraea gigantea, which has foliage like big vine leaves; Bamboos (Metake), Buphthalmum speciosum, Phalaris arundinaria, Polygonum sachalinense, and Aralia spinosa. By the island is a large colony of Nuphar lutea overhung with Willows. A little inland are colonies of Iris Pseudacoris studded all over with the seed pods that remain to give evidence of the wealth of flowers they gave last month. At the north side many subjects that give rich autumn tints have been planted for colour effect and this planting has been continued on the opposite side this year. *G.F.T.*

RHODODENDRONS.

Rhododendrons in Nature.

(Continued from p. 24).

Compare the description of the Burmese Rhododendron forests with the following description of Rhododendrons in the Tibetan Marches (Muli).

Here the mountains are built up almost entirely of limestone, the precipitation is very much less and there is a long, dry season, or two dry seasons. Here, too, Rhododendrons are found at every altitude, their sequence being—first at 9,000–10,000 feet, the undershrub species of the Pine forest R. radinum and R. ledoides; on the limestone escarpment, heavily shaded, are found also R. sino-lepidotum and one of the larger 'Lapponicum' species, the two last-named occurring as scattered bushlets. R. oreotrephes, whose foliage is so delightful, also grows with R. radinum on open Pine-clad slopes. In more open situations are scattered shrubs of R. decorum and R. yunnanense, both sufficiently abundant to make a noble display in April. R. racemosum and one of the many purple-flowered 'Lapponicums' also grow here and there are drifts and thickets of pink-flowered R. mollicomum, or other of the 'Scabrifolium' series.

At 10,000–11,000 feet in mixed forest one of the purple-flowered, rusty-leaved 'Heliolepsis' species grows socially, and in more open pastures scattered bushes of a pink-flowered 'Souliei' or 'Campylocarpum.' The deep scarlet-flowered R. Delavayi—the Chinese R. arboreum—as a gnarled tree, is found in wooded country, but it is local and does not extend quite so far north as Muli. At about the same altitude but only in very wet heavy gullies occurs the only big-leaved 'Falconeri' tree of this region, R. ficto-lacteum, a fine species with creamy-yellow flowers and immense leaves covered below with a chocolate-coloured wool. It is usually found in colonies. The other large-leaved species, R. niphargum and R. Beesianum, however, are more abundant, in Rhododendron forest, mixed with R. Wardii (a canary-yellow flowered 'Souliei') and R. Traillianum (white flowers speckled purple). On exposed slopes at the same altitude is a dense bush composed chiefly of R. heliolepis. At 12,000–13-000 feet altitude and upwards, R. Traillianum forms forests by itself.

Above 14,000 feet, two species of the 'Taliense' series (one we never heard of in Upper Burma) form impenetrable tangled thickets growing waist high; though under more favourable conditions they may grow five or six feet high. And these are the last of the shrub species—unless the snowy-white R. cephalanthoides of the limestone screes may be counted a shrub; which it is, of course, sometimes. But both R. cephalanthoides and R. Clementinae are at least as common dwarfed on the screes.

In this region it is above 14,000 feet, however, that Rhododendrons are found in their most expansive mood. The Alpine moorlands of the Marches, once swamped under ice, are now covered with a shallow sea of dwarf Rhododendrons, nearly all of which belong to the 'Lapponicum' series. Here grow a twigulous assortment of R. impeditum, R. fastigiatum and R intricatum, with lavender-violet flowers; R. scintillans, purple flowers; R. hippophaeoides, with lavender-blue flowers; R. chryseum and R. muliense, with yellow flowers, and many more. They flower in April, May, and June, and for two months before the rains break sheet the landscape with brilliant hues. For days and days it is possible to march ankle deep through a surf of ruffled colour under the turquoise dome of the Tibetan sky: rose-violet, canary-yellow and amber, plum-purple, claret, lavender-blue and Heather colour succeeding each other and woven into each other strand by strand.

If we compare the species of the Burma Hills with those of the Tibetan Marches, we notice the contrast at once. The Rhododendrons of the Marches fall into no more than fifteen or sixteen series, and these are by no means all represented in the twenty-six series in which our Burmese species were included. Whole sections are confined entirely or mainly to one or other region. There is scarcely a species common to both.

The point is of interest. Despite an excellent seed dispersal arrangement the light, dry, winged seeds being wind-borne, few species of Rhododendron are widely distributed. In the heart of the Rhododendron country, the range of each species is strictly limited. It is only as the fringes of their territory are approached where the conditions are becoming too difficult for them, that the same species has to do duty over large areas. This also sounds like economy of effort on the part of Nature! For example, in northern Asia, R. micranthum has a very wide range, and the distribution of R. lapponicum is practically circumpolar. R. decorum has a considerable range in Western and Central China, while R. ponticum is found at either end of the Mediterranean. Of closely restricted species on the other hand there are a number; and such species always occur scattered. R. Aucklandii and its Chinese representative R. auriculatum at once occur to mind. *F. Kingdon Ward.*

(To be continued).

WHITE-FLOWERED TULIPS.

The number of notable truly white Tulips entirely suitable for garden decoration and for forcing is somewhat limited, but there are a number of varieties in which white predominates.

One of the whitest flowers, and certainly one of the earliest to bloom, is Lady Boreel, formerly known as Joost van Vondel White. It is early and has a very good habit for bedding purposes, the stem being stout and strong and the blooms of a large size. Moreover the colour is pure and clean; there is no dirtiness or slatiness found so frequently in many of the white-flowered varieties. It is a splendid early forcer.

Mont Blanc is also a good white, and as I recall the flower it is of exceedingly good form and forced slightly earlier than Lady Boreel, although I believe there was only a day or two difference.

Pelican is another fine early variety, suitable both for bedding and forcing, like its parent White Hawk, from which it sported It is, however, a much larger flower and with its hugeness it has not shown any signs of coarseness. Its petals, also, are not so crinkled as in White Hawk, which must also be regarded as one of the best for forcing and garden bedding. I am reminded that I paid quite a stiff price for Pelican just before the war. It was regarded as a winner in Holland, and stocks must have been rapidly booked up—or maybe it was one of those varieties which are occasionally "cornered" by a ring of Dutch growers. However, within ten years its price has fallen almost to the same level as White Hawk.

White Beauty is a pretty thing and I have great regard for it, more so, perhaps, because its parent Pink Beauty is one of my favourite early Tulips. It is comparatively new, making its debut somewhere about 1912, and I have used it in combination in a bed with Pink Beauty for a number of years. Once the two are grown together the combination is generally repeated. White Beauty is a strong grower but it is only fit for late forcing.

Among this class mention must also be made of Diana which I have never before forced until this year. It is an excellent doer, comes very large, and has a good habit, and there are also L'Immaculée, Washington and Princess Helene, the last-named possessing a very handsome-shaped bloom.

The popular La Reine cannot rightly be discussed under the heading of White Tulips as it is slightly shaded with rose. It is forced by the million and when grown in large batches, the grower, by a system of shading and quick forcing, makes it come almost pure white. There is also its sport La Reine maximus which responds to the same treatment and has larger flowers.

White Swan must, of necessity, be included, and it is one of the latest to flower of its section. The blooms are egg-shaped and are fine for cutting, the stem being sufficiently long for effective display. I never use it nor would I recommend it for bedding *en masse*; its stem is too weak for this purpose, and although one of my favourites, it always has its quarters in a reserved part of the garden where its flowers are not missed when cut. I remember seeing White Swan used solely in a bed in one of the London parks this year, and it was a sorry sight, the arching flower stems nodding this way and that way, and lacking the rigidity and stiffness which, I think, are the main necessities for a Tulip if it is to be effectively employed in a definite formal scheme. White Swan will force, but must not be hurried. Every year I have noticed with the few that I grow under glass that the leaves are studded with drops of water in the mornings. I never get the same thing happening with other varieties of Tulips and maybe it is possessed of water stomata.

The next section is the Double Early Tulips, and Boule de Niege is my first selection as it is a very elegant, large flower, which, when fully opened, resembles a Paeony. It is also very charming when grown in bowls of fibre and will force readily. La Candeur is later and is a fine bedder, while Schoonoord, a sport from the ever popular Murillo, is a good double white of medium size, suitable for both bedding and forcing. I rely mainly upon the above, but there are also Pottebakker White which has long lasting qualities and is fairly early; alba maxima, not very early, and useful as a bedding variety, and Blanche Hâtive, perhaps the earliest of them all.

A white Darwin! I first saw a White Darwin at Haarlem in 1919, and there was much beating of drums about it. The flower was shown under the name of Zwanenburg, and no doubt was raised at the Zwanenburg Nurseries of Messrs. Van Tubergen in Haarlem. I do not think it will ever be very popular for it has many faults. First, it is not a pure white, and with me the blooms generally develop a slaty-blueness about the bases of the segments, both inside and out. One year it even showed a suspicion of pink around the edges of the perianth, but may be this was only seasonal. Again, it has black anthers, and the spilt pollen mars the beauty of the opened flower. It is a grand grower, robust and strong, and increases well. Its price to-day runs into many shillings a bulb. The other white Darwin, or one generally listed as the nearest approach to a white Darwin, is La Candeur or White Queen. It opens a rosy white, and when the pinky hue fades away the flower is more or less white, but there is not much purity of colour attached to it, and it always looks dirty and muddy. It is, however, a very cheap bulb.

So much for white Darwins, but it must be said that there are a number of pure white Darwins in existence with yellow pollen, and I have seen one or two which will, without doubt, become accepted favourites within the next few years.

The Cottage or May-flowering section, contains a number of white varieties, but most of them are marked with and feathered with rose shades. These include Picotee, Pride of Inglescombe, and Elegans alba. There are, however, a few pure white novelties, and of these Carrara (Fig. 17) is a most attractive flower. Unfortunately, it is still very dear, but there are stocks in many growers hands, consequently, one can look forward to a rapid reduction in price as time goes on. The outline of the flower is excellent, the texture silk-like, and the base of a light yellow of the same colour as the anthers. Carrara is undoubtedly a good thing, and when shown in London on May 10, 1921, by Messrs. E. H. Krelage and Son, Haarlem, it received an Award of Merit. I believe, too, there is another fine white called Albino, priced much about the same as Carrara, but I have never grown it, nor Themis, said to be of exceptional merit but still very expensive.

Included in this section are Dora, a medium-sized flower with reflexed segments; Parisian White, which takes a pink hue as the flowers age, and unfortunately sometimes listed as La Candeur—a name which is given to a double early white variety, a Darwin, and a May-flowerer; and Didieri alba, a small flower which comes very late and is grown commercially by some of the English growers in Lincolnshire as a cut flower. The last named variety is synonymous with Niphetos. *R. K.*

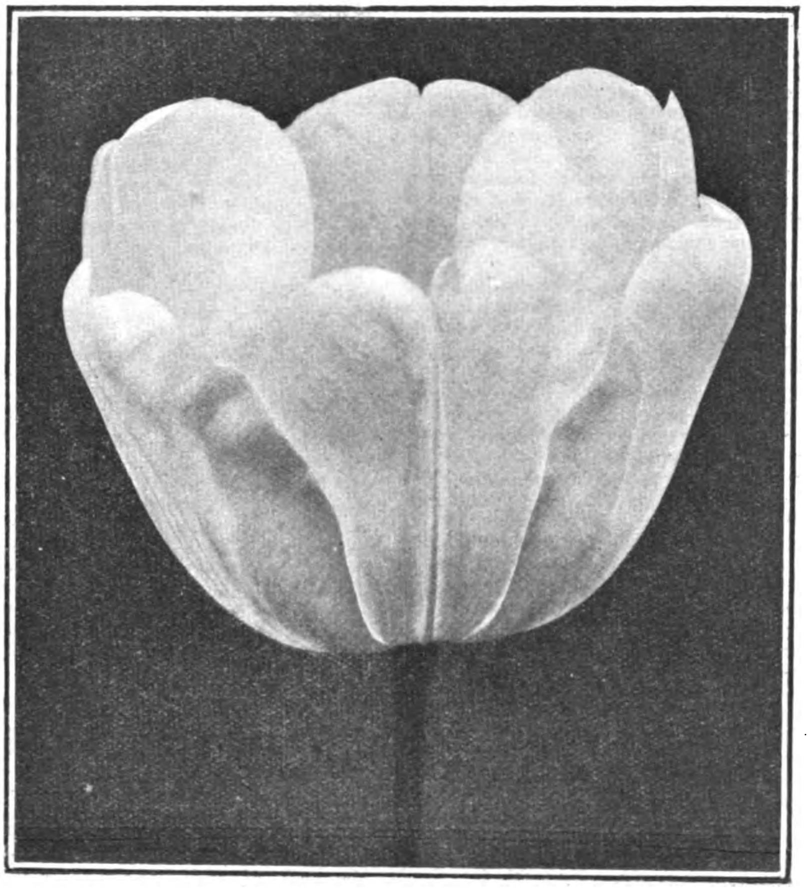


FIG. 17.—TULIP CARRARA.

VEGETABLE GARDEN.

THE PARSNIP

(Pastinaca sativa).

The Parsnip is not only a plant native to Great Britain, but it is to be found, and its valuable properties have been recognised, throughout the whole of Europe. Matthias Lobel, in his *Adversaria Stirpium*, 1576, gives the name of the cultivated form as Pastinaca domestica vulgi, but, according to Dodonaeus, the common name in "Engelant" at that time was Persenippe, which name it still retains in a more modern form.

The large, sweet roots are accounted very nourishing, not only valuable for the table but also a highly nutritious food for cattle. Cows fed upon them yield a more abundant supply of milk which is of superior quality and richness, and produces butter of a fine saffron yellow colour and excellent flavour, while horses are largely fed upon them, especially in Guernsey, Jersey and northern France.

The root buries itself in the ground much like the Sugar Beet, which root it also resembles in its saccharine content. The plant is quite hardy and the roots may be left in the ground with safety and advantage until March. Frost, it is said, improves the flavour.

In addition to its use as a food a very pleasant and wholesome wine has been made from the roots, some of which has found its way on to the markets as dry sherry. Vino di Pasto?

The Parsnip is a somewhat expensive crop to cultivate seeing that it needs good land, previously well manured and deeply cultivated: the expense of lifting is also a serious item. The price of the seed is generally very reasonable, but occasionally a failure of crop causes a phenomenal rise. Such an experience occurred at the time of the first great Potato famine when the firm of Warner in Cornhill sold Parsnip seed wholesale, in one-pound lots, as a great favour, at one guinea per pound. In more recent times another famine in Ireland necessitated steps being taken to prevent the starvation of the poor farmers in the distressful country, and the price of Parsnip seed again mounted as a consequence, while during the recent world war the situation, from lack of supplies and other causes, was so acute that the Government had to step in and regulate the sale of the very limited quantity available.

The plant of the wild Parsnip is so much smaller and in other ways different from the cultivated variety that Miller claimed they must be different species. His connection with the medical profession led him to view the matter from a medical standpoint, and he affirmed that the seed of the wild variety contained medicinal properties which were not to be found in seed of the domestic variety, and he soundly rated the druggists who had obtained, *on easy terms*, old seed of the latter and sold it as seed of the wild variety.

Just a word of caution. In harvesting Parsnip seed care should be taken to cover the hands, arms, face and neck so that these parts of the body are not touched by the leaves and branches; if this is not done a very poisonous irritation is set up, and painful blisters follow, which are not easily cured. Under certain circumstances the seed retains its vitality for two years, but very frequently, from no apparent cause, it perishes at the end of the first year.

Although the Parsnip has been in cultivation since the time of Dioscorides, A.D. 1., the number of varieties is very limited and the variations mostly affect the form and size: the colour and the inherent qualities of all the domestic varieties are very much alike.

The Long Smooth White is the modern name for the original variety. The sub-varieties are divided into two sections, one of which has roots with a full crown and consequently with a rather large core, the other has a much smaller core and is concave, or what is more popularly known as hollow-crowned. The hollow-crowned varieties are mostly preferred in England because the smaller core is more thickly covered with a layer of juicy, luscious flesh, which is pleasant to the taste and easily digested: the only fault being that water lodges in the hollow cavity, and in times of severe frost this is frozen and swells, and the roots are cracked and spoiled.

Of the full-crown section an American variety, highly esteemed in the neighbourhood of Boston, U.S.A., and known as the Arlington Long White, is the earliest variety, the roots being freely offered in the markets by the end of September. The largest and best English full-crowned variety is the giant Maltese, the leaves of which are claimed to suggest a Maltese cross. The Student, a variety ennobled from the wild Parsnip by Professor Buckman, as originally introduced by Messrs. Sutton and Sons, was very similar to the Arlington, but has since been developed into a root of much more elegant shape and larger size. As a cattle Parsnip it cannot be beaten. Guernsey and Jersey took kindly to the Parsnip for cattle feeding. Brittany followed suit and the outcome was the Guernsey variety, which is the most popular half-long sort at the present day. Magnum Bonum is a giant with a very thick shoulder and small core, unquestionably a leading variety for market growers who deal in Parsnips by the ton; it may be classed as a half-long sort. Intermediate is a distinct variety of comparatively recent introduction, resembling an elongated peg-top in shape, and is very serviceable for shallow soils. It is highly esteemed in the Vale of Evesham but is somewhat variable in character.

Of the strictly hollow-crowned varieties Elcombe's is the very best for private gardens; it is elegant in shape, of medium size, and without any trace of coarseness in quality. Tender and True, Champion, Lisbonnais and its many synonyms, are all large, long, shapely varieties, indispensable for the exhibition table. Last of all, although earliest in time of maturity, the Short Round is the very best for a small garden; it does well in almost any soil and may be lifted as easily as a Snowball Turnip. *S. B. Dicks.*

HOME CORRESPONDENCE.

Fasciated Tulips.—*K., Dublin*, in writing of the behaviour of Tulips in the public gardens of Dublin mentions La Tuilpe Noire blooming with more than one flower to a stem. In the case of this variety it may almost be said it is the rule. A large proportion out of every hundred plants invariably have more flowers than they ought to have to a stem, just as I think *K.* would find many of its blooms have the wrong number of petals. This freak multiplication of flowers is characteristic of several other varieties of hybrid Tulips, *e.g.*, Pensee Amere and Toison d'Or. Did *K.* notice that in the year 1922 there were more examples than usual of these fasciated stems among May-flowering Tulips? I put it down to the abnormal heat of 1921. Probably it is as well to mention that there are species and hybrid Tulips where the production of more flowers on one plant is the rule—dasystemon, persica and præstans are examples among species of Tulips, and the double Bleu Celeste and Mons. S. Mottet among hybrid forms. *Joseph Jacob.*

Gardeners and their Wives.—In reply to *Homer's* letter *re* gardeners' wives, it is, as he states, time we stood up for our rights. I, too, had several offers of situations but did not accept, as my wife's assistance was desired. Some employers will not or cannot get servants to stop with them, especially in out-of-way places, consequently the gardener's wife is needed as a source of economy. It is interesting to observe that it is the service of the gardener's wife that is desired; not the wife of an under-gardener. *Unit.*

Enkianthus.—With reference to the specimens of Enkianthus exhibited at the Chelsea Show, it would be interesting to know to what size they develop in favoured places in this country, as one does not see them planted so often as they deserve. Two specimens of E. japonicus and one of E. campanulatus have been flowering profusely here for the last three weeks in a sheltered spot in the large rock garden. They are all about nine feet high with a spread of six feet to eight feet. When in bloom they are very effective. *T. C., Dumfries.*

Tsuga Pattoniana.—You remark on p. 389 that it would need the pen of a Farrer to do justice to this tree, and many will turn to *The Eaves of the World* at your mention of Viburnum fragrans, and read again the story of the discovery on April 16, 1914, of Viburnum fragrans as a wild plant: "superb bushes ten feet high and more across in the yards of the green temple at Lanchow, whose blushing stars glisten as if built of crystals." It is interesting to note that Farrer in the *Garden of Asia*, written nearly twenty years ago, mentions Viburnum Carlesii, a species which, within the last few years has come to the front as a forcing shrub and for general garden decoration. *F.*

Freesias as Annuals.—With reference to Mr. J. Coutts' notes on p. 11 on growing Freesias from seeds as annuals I have had no experience with F. refracta alba and F. Leitchlinii, so cannot express any opinion about them, but as regards the coloured varieties, as Mr. Coutts states, they cannot be depended upon as annuals. I prefer to sow seeds in August as soon as they are ripe and never on any account do I attempt to transplant the seedlings. I put them in about three-quarters of an inch apart and by sowing fertile seeds only, it is usual to get a good percentage (95%) to germinate. I would not advise anyone to try pricking off the seedlings and if they do as I suggest I think they would have much better results. The seedlings of the coloured varieties, if sown early, give a good many flowers the following March, but they are seldom good enough to form an opinion on until the next year. I have sown Freesia seeds in March and flowered the seedlings in November, but had to grow them another year before their merits could be determined, which means they were not in good condition until a year later than if they had been sown in August as soon as the seeds were ripe; therefore it is of no use to sow in the spring. If the seeds are put in about an inch apart, then the seedling corms could be left to flower for the second time and make a good show. It is very fascinating to watch the seedlings flower as one never knows what one will get; it may be a future A.M. variety or it may be one for the rubbish heap. *P. H. Dalrymple, The Nurseries, Bartley.*

Yellow-flowering Tulips.—In reply to Mr. Jacob's comments on my notes on "Yellow-flowering Tulips," I will only concern myself with his notes on my selection of varieties for late displays in the garden. His letter contains so many interesting points—thieves, the basal variation in the variety Avis Kennicott, etc.—that I think they are worthy of a separate treatise later on. To return to the selection of the four varieties of my choice suitable for late bedding, only one found favour with Mr. Jacob. Walter T. Ware is thrown aside because his stock is riddled with thieves, whereas I have never seen them in my stock of this variety. But why Inglescombe Yellow is not retained I know not; it is cheap, of a delicate yellow tone, and is always to be depended on. Arethusa is evidently a fine thing, but I must admit I have never grown it and have not, as yet, seen it listed. I hope it is sufficiently inexpensive to allow of my enjoying a little bed next year; perhaps Mr. Jacob will be good enough to inform me from whom he obtains his supply. Moonlight, I admit, is very nice, but it is a soft flower. *R. K.*

HORTICULTURAL CONFERENCE AT LOUGHBOROUGH.

A well-attended Horticultural Conference was held at the Midland Agricultural and Dairy College, Sutton Bonington, Loughborough, recently, the chair being occupied by W. G. Lobjoit, Esq., O.B.E., Controller of Horticulture.

The Chairman gave a comprehensive résumé of the organisation of the Ministry of Agriculture in connection with horticultural instruction.

During the morning session Mr. H. V. Garner, B.Sc., Demonstrator and Guide, Rothamsted, opened a discussion on "The Work at Rothamsted and its Bearings on Horticulture." Mr. Garner pointed out that the soil study carried out at Rothamsted was important for the gardener as well as the farmer. He gave an outline of the organisation at Rothamsted for dealing with various problems and indicated the work that is being done in green-manuring, new manures, artificial farmyard manure, spray solutions and the control of Bean aphis.

During the afternoon session Mr. G. T. Spinks, M.A., Botanist, Long Ashton Fruit Research Station, opened a discussion on "Fruit Breeding." He referred to the backward state of breeding in connection with fruit and the fact that in the past, whilst some good fruit had been produced, it has largely been done by haphazard methods. He pointed out that breeding is being carried out at East Malling, Wisley and at Long Ashton, where they are investigating the problem of the production of new varieties suitable for commercial purposes. He mentioned that they are now working on different lines in an endeavour to combine the following desirable qualities in the breeding of fruit:—Hardy and vigorous constitution, good and reliable cropping powers, resistance to diseases and pests, attractive appearance and good flavour.

Mr. N. H. Grubb, M.Sc., Pomologist, East Malling Research Station, opened a discussion on "Raspberry Culture." He stated that field culture began about fifty years ago. Dealing with soil he pointed out that Raspberries did well on most soils provided there was sufficient moisture. He stated that at East Malling they had over 100 red sorts. He mentioned that the nomenclature of Raspberries throughout the country was in a confused state, so much so that in some cases the surest way to get pure stock of a particular variety was to order it from a certain place under a different name. He mentioned also that in Black Currants there were four different types under no fewer than forty different names.

Mr. W. H. Johns, Parks Superintendent, Bermondsey, late Horticultural Superintendent, Cornwall County Council, opened a discussion on "Some Problems affecting the Cultivation of Strawberries for Market." He stated that generally the Strawberry requires plenty of sun, that a Hazel loam is the best soil, and that the early Potato crop is an excellent preparation to planting a piece of ground with Strawberries. He considered that the trouble with "red plant" could be, to some extent, avoided by a careful selection of runners, and that any Strawberry area should have one quarter re-planted each year.

SOCIETIES.

NATIONAL SWEET PEA.

July 10 and 11.—The National Sweet Pea Society held its twenty-fourth exhibition at the Royal Horticultural Hall, Vincent Square, Westminster. The exhibition was fully equal to the usual standard, and the quality of the blooms was excellent. The competition was very keen, and the trade displays attracted admiration from all.

The show was opened by Queen Augusta Victoria of Portugal, who presented the principal challenge cups to the successful competitors.

There were on view vases of varieties which had received distinction in the Society's 1924 Trials, and these attracted considerable attention. Wembley, a pale lavender flower of fine substance and large individual blooms received a First-Class Certificate and was provisionally awarded the Gold Medal of the Society as being the best flower in the trials. It was shown by Messrs. R. Bolton and Sons, who also obtained an Award of Merit for Ivory Picture, a cream-coloured flower faintly tinted with flesh-pink on the wings. Messrs. Andrew Ireland and Hitchcock were granted an Award of Merit for Lord Lascelles, a deep lavender-blue flower of good size and substance.

General Classes.

The class for the *Daily Mail* Challenge Cup offered for twelve vases of Sweet Peas, to consist of named varieties in commerce, attracted three competitors, and the first prize was deservedly awarded to Lt.-Col. Sir R. Baker (gr. Mr. A. E. Usher), Ranston, Blandford. His group consisted of the following varieties: Picture, Charming, Royal Sovereign, Mrs. A. Hitchcock, Daffodil, Mascotts Purple, Mrs. Charles Unwin, R. F. Felton, Wild Rose (very fine), Powerscourt, Hebe, and Tangerine Improved. The second prize was secured by Mr. F. W. Franks (gr. Mr. W. Humphrey), Loampits, Tonbridge, who had amongst his collection exceptionally good vases of Constance Hinton, Hawlmark Salmon Pink, Powerscourt, Royal Purple, and George Shawyer. Mrs. Nugent Allfrey (gr. Mr. A. R. Brumby), Sapham, Rutland, was third.

The Sutton Cup, offered for eighteen vases of Sweet Peas, distinct varieties, was also awarded to Lt.-Col. Sir R. Baker, Bt., who staged magnificent specimens of Constance Hinton, Matchless, Geo. Shawyer, Fair Lady, Wizard, Valentine, and Jean Ireland. The other competitor, Mr. Sydney Horton, Wolverhampton, was second.

For six vases of Sweet Peas distinct The Cory Cup was gained by Gen. R. L. Mullins, C.B. (gr. Mr. T. Bains), Langham Oaks, Colchester. His selection was admirable and consisted of Constance Hinton (excellent), Mrs. A. Hitchcock, Royal Purple, Royal Sovereign, Mrs. Tom Jones, and Hawlmark Pink. Miss Gatehouse (gr. Mr. J. Johnson), Bognor Lodge, Bognor, was second, and Col. H. L. Scott (gr. Mr. Muzz), Hawthorn Lodge, Bracknell, was third. There were fifteen exhibitors in this class.

In the class for three vases of Sweet Peas, three varieties in each vase, the first prize, out of eight competitors, was again awarded to Lt.-Col. Sir R. Baker, who showed the following trios:—Wild Rose, Champagne, Jack Cornwall, V.C.; Matchless, R. F. Felton, and Tangerine Improved; and Fair Lady, Royal Purple and Jean Ireland. Mrs. H. Williamson (gr. Mr. W. Langsdon), Canterbury, was second, followed by Miss Russell (gr. Mr. C. H. Rundell), Canterbury.

For three vases of Sweet Peas, selected from particular colours, Lt.-Col. Sir R. Baker was again the most successful competitor and showed perfect vases of Charming, Hebe, and Mascotts Ingman. The second prize went to Mr. F. J. Wheeler (gr. Mr. F. Leonard), Yarmouth, Isle of Wight, and the third to Mrs. C. Pearson (gr. C. Hodgson), Sudbury, Suffolk.

Open Classes

In the class for three vases of seedling Sweet Peas, consisting of varieties not yet in commerce, Messrs. E. W. King and Co., Ltd., secured the premier award with Tom Sykes, a bright rose-cerise flower; Britannia, rose pink on a cream ground; and Giant Purple, a magnificent bright colour. The other competitor, Mr. J. Stevenson, was second. The variety Tom Sykes also gained for Messrs. E. W. King and Co., Ltd., the first prize in a similar class for one vase of a seedling.

There were four competitors in the raisers class for six vases of Sweet Peas, distinct varieties, raised by the exhibitor, and Messrs. T. Cullen and Sons had a perfect half dozen, the varieties represented being Powerscourt, light lavender; Blue Bird, lavender-blue; Lucifer, a glowing cerise; Dainty Maid, pale blush; Snow Queen, pure white, and Pink Perfection, a deep pink. Mr. J. Stevenson and Mr. H. J. Damerum, Hayling Island, were second and third respectively.

For twelve vases of Sweet Peas to consist of named varieties in commerce, Mr. Arthur Hatton (gr. Mr. W. Secrett), Redhill, won the first prize in a very keenly contested class. His vases of Royal Scot, Constance Hinton, Geo. Shawyer and Hawlmark Salmon Pink, were particularly outstanding. Miss Russell followed second and Mr. W. H. Walker, Lewes, was third.

The Burpee Cup offered for a display of waved Sweet Peas arranged on a space eight feet by three feet was awarded to Messrs. E. W. King and Co., Ltd., who had a very pretty group consisting of baskets and vases of clean bright flowers of Geo. Shawyer, Pimpernel, a vivid scarlet variety; Orchid, rose lavender; Advance, rose pink, and Royal Sovereign, bright orange. The other competitor, Mr. A. S. Dunton, Wolverhampton, secured the second prize with a very noteworthy arrangement, but, unfortunately, his flowers were too cramped in the space provided. Hilda, Jean Ireland, Sapphire and Powerscourt were a few of his best varieties.

Single Bunch Classes.

The single bunch classes were one of the features of the show and every class attracted many competitors. In the one for a vase of white Sweet Peas, Lt.-Col. Sir R. Baker gained first prize with Constance Hinton, and he was also the most successful competitor in the class for one vase of lavender or mauve Sweet Peas showing Powerscourt; for one vase of cream, buff, or ivory Sweet Peas with Matchless; for one vase of any other colour not specified with the variety Wild Rose; and for one vase of orange or orange scarlet Sweet Peas with magnificent blooms of Tangerine Improved. Mr. E. Wilkinson excelled in the class for one vase of a pink variety with Hebe, and Mr. Walker was first in the class for a cerise or cerise-scarlet variety with Royal Scot. Miss Russell took two first prizes in this series showing Charity in the class for a vase of crimson or scarlet varieties and Annie Ireland in the class for a Picotee-edged Sweet Pea.

Mr. F. W. Franks won in the class for one vase of a maroon variety with the variety Warrior, and was also successful in the class for a blue variety with perfect specimens of Mrs. T. Jones.

District Classes.

The district classes were responsible for very keen and interesting competition, and Lt.-Col. Sir R. Baker was once more a most successful competitor in the Western Counties and South Wales Class with six vases consisting of perfectly grown flowers of Mrs. W. J. Unwin, Constance Hinton, Fordhook Orange, R. F. Felton, Elegance, and Tangerine Improved. Mr. F. J. Cashnella, Bath, and Mr. F. Churchward, were second and third respectively. In the southern class General R. L. Mullins, C.B., Langham Oaks, Colchester, was placed first out of nine exhibitors. His varieties were Orchid, Warrior, Advance, Geo. Shawyer, Charity and Matchless. Mr. F. W. Franks was second with a very commendable collection, and Mrs. S. Woolmer (gr. Mr. S. Astley), Warfield Priory, was third. The northern counties class attracted only one competitor Mr. A. Leigh, Stoke-on-Trent, and he was awarded the first prize with flowers of high quality, his half-dozen being The Sultan, Matchless, Hebe, Jean Ireland, Mrs. A. Hitchcock, and Elegance. There were seven competitors in the Midland counties class, and Mrs. C. Pearson, was first and showed Constance Hinton, Picture, Royal Scot, The Sultan, Advance, and Austin Frederick Improved. The second prize was gained by Dr. J. Cole, Beeston, and the third by Mr. F. E. Downing, Burton Latimer.

Smaller Amateur Classes.

In the classes set aside for single-handed gardeners, Dr. J. Cole was the only exhibitor in the class for nine vases of distinct varieties and was placed first. His flowers of Royal Scot, Picture, and Lord Lascelles were of very high merit. There appeared to be no first prize awarded in the class for six vases of Sweet Peas, the second prize going to Mr. W. Martineau, of Boxmore, and the third to Mr. R. L. Blake, Hayling Island. For three vases of distinct varieties the first prize winner was Mr. P. Straker of Carshalton, who showed high quality flowers of Felicity, Faith and Fair Lady.

In the smaller amateur classes Mr. F. Cashnella and Mr. W. Huffey, Tonbridge, Mr. C. R. Jaggs, Mr. F. Churchward, Mr. J. Randell, Mr. E. H. Palmer, Rev. S. W. H. Aldwell, and Mr. B. Butcher, Yarmouth, Isle of Wight, were the principal first prize winners.

Affiliated Societies and Artistic Classes.

In the affiliated societies national competition class for twelve vases there were four competitors, but unfortunately two of these were disqualified. The Wincheap District Society, Canterbury, gained the first prize with the best twelve vases of distinct Sweet Peas and the flowers of Constance Hinton, Doris, Matchless, Mrs. T. Jones and Sensation were of very high merit. The Bearsted and Turnham Society was placed second.

In the artistic classes, open only to lady members, Mrs. A. R. Bide, Farnham, secured the first prize for a table decoration of Sweet Peas, and had a very pleasing arrangement of rose-pink and lavender coloured flowers brightened with bronze ornamental foliage and Asparagus plumosus. The black bowls in which the flowers were grouped made a charming contrast to the brightness of the flowers. Mrs. A. D. Ruff, Sharnbrook employed salmon and Picotee Sweet Peas with wild Grasses and Stellaria Holostea. The third prize was gained by Mrs. P. Peyman, Sidmouth, who also had a creditable exhibit of pink and lavender-coloured flowers, prettily combined with wild Grasses. Mrs. A. D. Ruff excelled in the class for an ornamental basket of Sweet Peas, in which a pink-coloured variety predominated blended with a cream variety. Ampelopsis and Acer foliage was used in conjunction with the flowers as well as the fronds of Asparagus plumosus. Mrs. A. R. Bide was placed second, and Miss G. Burt, Coggleshall, was third. For a bowl of Sweet Peas, three varieties only, Mrs. A. D. Ruff was again the most successful competitor and had a very attractive arrangement with lavender, cream and pale pink flowers. The second prize was gained by Miss G. Burt and the third by Mrs. A. R. Bide.

Trade Groups.

Very highly meritorious trade exhibits were arranged around the Hall, and the City of Bath Perpetual Challenge Cup offered for the best trade exhibit of Sweet Peas grown out-of-doors without any protection or shading and arranged in a space not exceeding twelve feet and four feet by six feet was awarded to Messrs. Sutton and Sons, who had a very pleasing group, including the varieties Doris, Powerscourt, Mrs. A. Hitchcock, President Harding, Austin Frederick Improved, Burpee's Giant White, and Charity. Large Gold Medals were gained by Messrs. Bolton and Sons and Messrs. E. W. King and Co., Ltd., both exhibitors staging flowers of the highest quality. Mr. J. Stevenson gained a Gold Medal, and Messrs. S. Bide and Sons were awarded a Silver Medal. In a similar class for the best trade exhibit staged in a space fifteen feet by four feet six inches, Messrs. Bolton and Sons secured the Eastbourne Challenge Cup with a very fine arrangement of baskets and vases of flowers, the chief of which were Powerscourt, Supreme, Comrade, Mammoth, and Hawlmark Salmon Pink. Messrs. Dobbie and Co., and Messrs. Ireland and Hitchcock were awarded Large Gold Medals, and Messrs. Sutton and Sons secured a Gold Medal.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, June 27.—*Committee present:* R. Ashworth, Esq. (in the chair). Messrs. A. Burns, A. Coningsby, D. A. Cowan, J. Cypher, A. G. Ellwood, J. Evans, W. Giles, J. Howes, F. K. Sander, E. W. Thompson and H. Arthur (secretary).

First-Class Certificates.

Odontoglossum St. Elmo var. Laura (*Odm. Admiral Sturdee × Empress.* A flower of good shape with a rich purple blotched centre and white margin.

Odontoglossum Senlac (*Jasper × Lambeauianum.* A very large, heavily blotched flower of the amabile section. Both these were from Mrs. Gratrix.

Cypripedium Enchantress, Pitt's variety (*Curtisii Sanderae × Alma Gevaert*). A well formed flower of the albino section. From H. T. Pitt, Esq.

Awards of Merit.

Laelio-Cattleya Canhamiana, Rosslyn variety; Cattleya suavior var. Glory, Miltonia Wm. Pitt var. Moulin Rouge and *M. Wm. Pitt var. King's Crown.* From H. T. Pitt, Esq.

Groups.

S. Gratrix, Esq. West Point (gr. Mr. J. Howes), staged a group for which a Gold Medal was awarded.

Silver-gilt Medals were awarded to A. Hanmer, Esq. (gr. Mr. G. Giles), Buxton, and H. T. Pitt, Esq. (gr. F. W. Thurgood), respectively, for groups of Orchids.

Annual Meeting.

The Annual Meeting was held on this date; Mr. F. K. Sander, presided. The balance sheet, as submitted, was adopted. The Executive Committee was unanimously re-elected with the exception of Mr. J. Howes, who desired to retire, and Mr. A. Burns was appointed to fill the vacancy. The Awards Committee was nominated *en bloc*, but there being two resignations it was decided to invite Mrs. Bruce and Miss Wrigley to fill the vacancies, and they have accepted.

Prizes were presented to the successful competitors as follow: -

Mr. J. J. Bolton's prize to S. Gratrix, Esq., (gardener's prize to Mr. J. Howes); Botanic Society of Manchester's Silver-gilt Medal to Mr. J. Howes; Messrs. Cowan and Co.'s Prize to S. Gratrix, Esq., (gardener's prize to Mr. J. Howes); Messrs Charlesworth and Co.'s prize to S. Gratrix, Esq., (gardener's prize to Mr. J. Howes); Messrs. Cypher and Co.'s prize to S Gratrix, Esq., (gardener's prize to Mr. J. Howes); Mr. J. Evans' prize to S. Gratrix, Esq., (gardener's prize to Mr. J. Howes); Mr. A. Hanmer's prize to S. Gratrix, Esq., (gardener's prize to Mr. J. Howes); Mr. P. Smith's prize to Mr. J. Howes; Mr. and Mrs. Gratrix's prize to A. Hanmer, Esq., (gardener's prize to Mr. G. Giles); D. Losh-Thorpe, Esq., prize to A. Hanmer, Esq., (gardener's prize to Mr. G. Giles); P. Smith, Esq., third prize to Mr. G. Giles; Mr. J. Evans' second prize to A. Hanmer, Esq., the Botanic Society of Manchester's Silver Medal was awarded to Mr. A. Burns; and P. Smith's second prize to Mr. A. Burns.

ROYAL CALEDONIAN HORTICULTURAL.

The ordinary monthly meeting of this society was held at 5, St Andrew Square, Edinburgh, on the 1st inst., Mr. Robert Fife, President, in the chair.

A paper on the "Roses introduced since 1922," was read by Mr. George M. Taylor, Edinburgh. Mr. Taylor said that of the seedling Roses shown at the recent exhibition of the National Rose Society not one was worth cultivating. He did not subscribe to the view that the newer Roses were losing their perfume, some of the latest productions such as Marcia Stanhope and F. J. Harrison, being notable for their fragrance. The finest Rose raised since 1922 he considered to be Betty Uprichard, whilst Mabel Morse was a splendid yellow Rose of better habit than Golden Emblem.

The exhibits were:—Pelargoniums from Messrs. Dobbie and Co., Ltd., Edinburgh (Award of Merit); Peaches from Mr. D. Armstrong, The Drum Gardens, Edinburgh (Cultural Certificate); Irises from Mr. Wm. Cuthbertson, J.P., Duddingston, Edinburgh, and seedling Carnations from Mr. Wm. Crighton, Mortonhall Gardens, Edinburgh.

DEESIDE FIELD CLUB.

The usual monthly excursion of this club was held recently, the venue on this occasion being the beautiful and secluded Glen Tanar, Aboyne, Aberdeenshire, owned by Lord Glentanar. Some 200 members took part in the excursion, assembling at Aboyne Station, from whence they proceeded by motor car and charabanc along the South Deeside Road, past the Tower of Ess and the Queen's Drive through the glen until the shiel at Coirebhruach was reached. The journey was made in beautiful weather, and the members were delighted with the magnificent scenery that met their eyes as they passed through the delightful glen with the impetuous Tanar rushing over its boulder-strewn bed, with Mount Keen standing out boldly. The gnarled Pine trees—relics of the ancient Caledonian forest—evoked much interest. The waterfall, an entrancing picture, was also visited, and greatly admired. The party then adjourned for tea, after which Mr. G. M. Fraser, librarian, Aberdeen Public Library, read a paper on "Glen Tanar and its Historical Associations," in the course of which he touched on the Glen's connection with the Covenanting and Jacobite times, the smuggling period, and the period when large rafts of timber used to be floated down the Dee to Aberdeen from the district they were visiting. Mr. Fraser was warmly thanked for his address, and on the call of General de Winton, thanks were given Lord Glentanar for allowing them to visit his beautiful glen. Mr. Smith, head forester, and Mr. Strang, head keeper, contributed greatly to the enjoyment and comfort of the visitors.

PETERBOROUGH AGRICULTURAL.

The Peterborough Agricultural Society included a horticultural section in their annual show on the 9th inst for the first time and the innovation proved a great success. The open competitive classes were well filled and some excellent exhibits were staged. Trade exhibits were a feature of the show. Messrs. Allwood Bros., Haywards Heath, were awarded a Gold Medal for Carnations; Mr. G. C. W. Fitzwilliams, Milton, was also awarded a Gold Medal for a collection of vegetables and fruits. Many other traders received Silver Medals, including Messrs. Wood and Ingram, Huntingdon, for Roses; and Messrs. Geo. Elsom, Spalding, for vegetables and flowers. A constant stream of visitors passed through the large marques and the sum of £51 13s. was taken on the first day.

In the open classes Messrs. Eames and Son, and Messrs. W. and J. Brown, both of Peterborough, won, in the order named, for a group of hardy flowers; the best Sweet Peas were shown by Messrs. Eames and Sons; the best Carnations by Col. Proby, Elton Hall: the best Roses by Messrs. W. and J. Brown, and the best Roses on stands by Mr. G. Burch.

ROYAL TUNBRIDGE WELLS HORTICULTURAL.

The Royal Tunbridge Welis Horticultural Society held its second annual exhibition in the Calverly Grounds on July 1 and 2, when very excellent displays of trade and competitive exhibits were staged. Much improvement had been made on the 1923 exhibition with regard to tent space, the two large, well-ventilated marquees giving much more room to view the exhibits. The Borough Council is also to be congratulated on its endeavours to make the grounds more suitable by levelling the undulating parts and by having water and electric light laid on.

The opening ceremony was performed by Countess de la Warr, who commented on the excellence of the show.

Of the numerous trade displays Messrs. R. W. Wallace and Co. had a water garden artistically arranged with Japanese Irises, Water Lilies, Spiraeas, Primulas and other moisture-loving plants. The same firm also exhibited a miniature rock garden. Herbaceous cut flowers, including Delphiniums King George and Blue Boy and several other choice subjects, ornamental shrubs and Pinks were also shown by this firm (Large Gold Medal). Messrs. John Charlton and Sons had a magnificent show of hardy border flowers including Delphiniums and Lupins as well as Irises and Sweet Peas in variety. At the entrance to one of the tents this firm had splendid specimens of beautiful foliage and flowering shrubs, including excellent coloured Acers in many varieties (Large Gold Medal). Messrs. Hollamby's Nurseries made a good display with Roses including climbing, polyantha and bedding varieties; Hydrangeas, Campanula Telham Beauty, and Spiraeas Rhineland and Deutchland were also shown in large masses. This firm also displayed numerous ornamental trees and shrubs (Silver Medal). Mr. G. J. Adams constructed a miniature rock garden, and also exhibited Delphiniums and Violas in variety (Silver-Gilt Medal). Mr. Frank Webber exhibited Roses, Delphiniums, Humeas and Eulalias. Messrs. J. K. King and Sons showed a splendid collection of Sweet Peas staged in gilt baskets (Large Gold Medal). Messrs. Sutton and Sons also displayed Sweet Peas in their usual artistic manner, showing a very comprehensive selection (Large Gold Medal). Mr. W. Wells, Jun., staged a very excellent group of herbaceous cut flowers in bold style, and the many excellent spikes and varieties of Delphiniums which formed the background of the group were much admired (Gold Medal).

Messrs. Toogood and Son exhibited Irises, Sweet Peas and vegetables, making an attractive exhibit (Silver Medal). Messrs. Bunyard and Co. staged a group of Roses and herbaceous cut flowers in great variety (Silver-Gilt Medal). The Maytham Gardens showed cut flowers in variety (Silver Medal), and Messrs. Skelton and Kirby staged a collection of Alpines and Herbaceous cut flowers. Messrs. Reamsbottom and Co. brought a display of Anemones, whilst Messrs. Armstrong and Brown had a splendid group of choice Orchids, their exhibit covering 150 square feet (Large Gold Medal).

Competitive Classes.

In the open trade class for forty-eight blooms of Roses, distinct varieties, Messrs. F. Cant and Co., Colchester, secured the first prize with a noteworthy collection of perfect blooms and in the class for nine garden or decorative Roses, distinct, the same exhibitors were also placed first.

For eighteen blooms, distinct, Mr. S. W. Burgess, Tonbridge, was first, followed by Baron Knorp, and Mr. L. M. Pink, respectively; while for twelve blooms, distinct, Mr. H. H. Claydon, Bishops Stortford, secured the premier award, the second prize going to Mr. Amos Holmwood, Jarvisbrook. Baron Knorp and Mr. E. R. Workman, Hayling Island, were first and second respectively in the class for six vases of distinct varieties of Roses; in a similar class for garden and decorative varieties in not fewer than three blooms of each, Mr. H. H. Claydon and Mrs. Jones were placed in the order named. In the section open to growers of fewer than two hundred and fifty plants, Mr. A. M. Darling was the first prize winner in the class for six distinct blooms, while for three vases distinct, five blooms in a vase, Miss E. Barnes was the most successful competitor. For twelve blooms, distinct, open only to residents in the borough of Tunbridge Wells, Mr. E. R. Ashton was the chief prize winner, while for six blooms, distinct, Miss E. Barnes was again placed first. For a group of pot plants and cut flowers the first prize was awarded to Mr. W. H. McAlpine: Mr. E. R. Ashton was placed second and Mr. A. G. Pelton and Mr. S. H. Page equal third. In the class for a group of pot plants suitable for table decoration, Mrs. J. J. Barrow took the premier award.

In the class for a group of Orchids arranged for effect in a space four feet by three feet, the only exhibitor, Mr. E. R. Ashton, was awarded the first prize. The class for twelve bunches of cut hardy flowers attracted keen competition and the premier prize was awarded to Mr. W. Huffey, Tonbridge, the second prize going to Mr. B. Bullivant, Pembury, while in the class for six vases of hardy flowers, restricted to exhibitors employing not more than one gardener, Messrs. Pelton and Page were placed equal firsts.

The classes for Sweet Peas were very keenly contested; in the one for twelve vases of distinct varieties, not more than twenty spikes in a vase, Mr. F. W. Franks, Tonbridge, secured the first prize with especially good vases ef Charming, Comrade and Constance Hinton. The second prize went to Mr. W. H. McAlpine, Nutfield, and the third to Mrs. A. Scarlett, Uckfield. For nine vases of Sweet Peas distinct, Mr. H. S. Mountain, Groombridge, Sussex, was first, and Mr. Huffy, Tonbridge, second.

The principal class in the section devoted to fruit was for a table arrangement of nine dishes decorated for effect, two varieties of Grapes admitted; Capt. M. Drummond led with superb specimens of Peaches, Nectarines, Strawberries, Figs, Melons and Muscat of Alexandria Grapes. Mrs. J. J. Barrow, Holmewood, Langton, was second, and Mr. W. H. McAlpine third. For four dishes of hardy fruits Capt. M. Drummond excelled with fine examples of Cherry White Heart, Strawberry The Duke, Raspberry Lloyd George and Black Currant Boskoop Giant. For three bunches of Grapes Mr. B. H. Collins, Tunbridge Wells, was first, and Capt. Drummond was the first prize winner in the classes for one dish of Peaches, one dish of Nectarines and one dish of Strawberries. In the class for a display of nine kinds of vegetables, arranged in a space not to exceed four feet by three feet, Mr. F. W. Franks was the first prize winner.

ANSWERS TO CORRESPONDENTS.

Blue Hydrangeas: *C. R.* There is no reason why Hydrangeas treated with ammoniated alum should not produce blue flowers for several years in succession, but of course the treatment must be carried out each year. It is not enough to treat them for one year and then expect the flowers to be a good blue for several years without the continued application of the alum.

Diseased Strawberries: *W. G., D. M.* and *Teacher*. The specimens of Strawberries are affected with what is commonly known as red plant disease and is due to the parasite eelworm, Aphelenchus fragariae. The plants affected with this disease show amongst other symptoms deep blood-red coloration in the young petioles and on the underside of the unfolding leaflets; in comparison with normal plants the leaves tend to be undersized. There is no cure for the trouble and we can only advise you to destroy all affected plants, because sooner or later they will die out and the fruits given from even slightly infected plants are very much below the average. It is, moreover, important that no runners should be taken from infected plants.

Flaming Indian Acacia: *C. R.* We do not know what plant is meant by the "Flaming Indian Acacia." Do you mean Caesalpinia (Poinceana) pulcherrima? commonly known as "Pride of Barbadoes" or "Barbadoes Fence Flower" as it is largely used for forming hedges. If so, it is easily raised from seeds and should be grown in an ordinary stove temperature of 60° to 65°. This plant is not common in cultivation, and is rather uncertain in flowering.

Fasciated Tulip: *A. J. D.* Fasciation of the flower, such as you send, is not uncommon. The double variety Blue Flag and Bartigon generally show one or two petaloid leaves.

Peas and Strawberries: *J. H.* The root rot of the specimen of culinary Pea you sent for examination is due to Thielavia basicola, and we doubt if you can do anything now to allay the ravages of this pest. Thorough aeration of the soil by drainage and cultivation is desirable and it is thought that the fungus is constantly associated with an alkaline soil. With regard to the specimen of Strawberry sent, the fruits appear to be imperfectly fertilised, but we shall be obliged if you will send us a specimen of a whole plant, because there may be some disease present on the roots.

Rose Leaves Spotted: *G. R.* The Rose leaves are affected with the black spot disease, which may be controlled by the use of sodium carbonate as a fungicide. This may be used in the crystalline form at the rate of one-and-a-half ounce, or three-quarters of an ounce of the dry form to one gallon of water. Soap should be added to make the solution adhere and the spray should be applied with force so that all the leaves and stems are well treated. All diseased leaves should be gathered and burned.

Communications Received.—W. F. H.—J. V. P.—S. C.—J. M.—J. P.—T. S.—A. N. R.—F. W. J.

MARKETS.

COVENT GARDEN, Tuesday, July 15, 1924.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations, It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated.)

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-18 0
—elegans	10 0-12 0
Aralia Sieboldii ...	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-15 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	48 0-72 0
Asplenium, per doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Cacti, per tray, —12's, 15's ...	5 0- 7 0
Crassulas, 48's, per doz.	21 0-24 0
Crotons, per doz.	30 0-42 0
Cyrtomium ...	10 0-15 0
Erica magnifica, per doz. ...	24 0-36 0
Hydrangea paniculata, per doz.	30 0-36 0
H. Hortensia, white, 48's, per doz. ...	18 0-30 0
—blue, 48's, per doz.	30 0-42 0
Hydrangeas, pink, 48's, per doz. ...	18 0-24 0
Marguerites, white, 48's, per doz. ...	12 0-18 0
Mignonette, 48's, per doz. ...	10 0-12 0
Nephrolepis, in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia ...	24 0-30 0
—60's	15 0-18 0
—Cocos	24 0-36 0
Pteris, in variety	12 0-21 0
—large 60's ...	5 0- 6 0
—small	4 0- 4 6
—72's, per tray of 15's	3 6- 4 0
Rhodanthe, pink and white, per doz.	9 0-12 0
Roses, Polyantha, 48's, per doz. ...	15 0-21 0
Spiraeas, pink ...	21 0-27 0
Stocks, white, 48's, per doz. ...	12 0-15 0
—coloured, 48's, per doz. ...	18 0-24 0
Verbena, Miss Wilmott, per doz.	12 0-15 0

Cut Flowers, etc. Average Wholesale Prices.

	s. d. s.d.
Achillea, The Pearl, per doz. bun.	2 0- 4 0
Adiantum decorum, doz. bun.	10 0-12 0
—cuneatum, per doz. bun. ...	6 0- 9 0
Alstroemeria, per doz. bun. ...	5 0- 8 0
Asparagus plumosus, per bun.	
long trails, 6's	4 0- 5 0
med. sprays ...	2 6- 3 6
short „ ...	1 0- 1 6
—Sprengeri, per bun.	
long sprays ...	3 0- 3 6
med. „ ...	1 6- 2 6
short „ ...	1 0- 1 3
Carnations, per doz. blooms ...	1 0- 2 6
Chrysanthemum maximum, per doz. bun. ...	2 6- 3 6
—Shasta Daisy, per doz. bun. ...	2 0- 3 0
Coreopsis, per doz. bun.	— 3 0
Cornflowers, per doz. bun. ...	1 0- 1 6
Croton leaves, var., doz. bun.	2 0- 2 6
Delphinium, per doz. bun. ...	3 0- 5 0
Fern, French, per doz. bun. ...	1 0- 1 3
Gaillardia, per doz. bun.	2 0- 4 0
Gardenias, per box, 12's	4 0- 6 0
Gladiolus—	
—Blushing Bride, per doz. bun. ...	9 0-12 0
—The Bride, per doz. bun. ...	10 0-15 0
—salmon, per doz. spikes	2 0- 3 0
—scarlet, per doz. spikes	3 0- 3 6
—pink, per doz. spikes	2 6- 3 0
—white, per doz. spikes	3 0- 3 6
Gypsophila elegans, per doz. bun. ...	5 0- 6 0
—paniculata, per doz. bun. ...	12 0-18 0
Iceland Poppies, per doz. bun. ...	2 0- 2 6
Roses, Richmond, per doz.... ...	1 6- 2 6
—Frau Karl Druschki, per doz.	1 0- 2 6
—Mme. Butterfly, per doz. blooms	2 0- 3 0
—White, per doz.	2 0- 3 0
—Columbia, per doz.	1 6- 3 0
—Ophelia, per doz.	1 6- 2 6
—Sunburst, per doz.	2 0- 2 6
—Mme. Abel Chatenay	1 6- 2 6
Statice, mauve ...	5 0- 8 0
Stephanotis, per 72 pips	— 3 0
Sweet Peas, per doz. bun. ...	3 0- 6 0
Heather, white, per doz. bun. ...	9 0-12 0
Lilium lancifolium album, per doz. blooms... ...	3 0- 4 0
Lilium longiflorum long, per doz....	3 0- 4 0
short „ „ ...	2 0- 2 6
—rubrum long, per doz. blooms ...	3 0- 3 6
—short „ „ ...	3 0- 3 6
Lily of the Valley, per doz. bun....	30 0-36 0
Orchids, per doz.	
—Cattleyas ...	13 0-24 0
Pelargonium, white, per doz. bunch	8 0- 9 0
Smilax, per doz. trails	4 0- 5 0
Scabiosa caucasica, per doz. bun. ...	3 0- 4 0
Stock, double white, per doz. bun.	6 0-12 0
Sweet Sultan, mauve, per doz. bun.	4 0- 6 0
—white, per doz. bun.	4 0- 6 0
Tuberoses, per packet	1 6- 2 0
Violas, per doz. bun.	2 6- 3 0

Remarks.—Large quantities of hardy flowers and annuals continue to arrive, and prices rule low all round. Achillea The Pearl, Alstroemerias, Gypsophila paniculata, Statice latifolia (Sea Lavender), Eryngiums and Erigeron are amongst the additions to this section. A few white Asters are available, but the blooms have not very long stems. Carnations are a glut just now, some of the inferior blooms being useless on arrival in the market, and only fit for the street traders. A few blooms of Lilium regale are on sale.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
New Zealand Sturmer Pippin	20 0-22 0
—others	16 0-18 0
Tasmanian ...	16 0-20 0
—others	16 0-18 0
Bananas, singles	13 0-19 0
—doubles	20 0-22 6
Grapes—	
—Canon Hall ...	4 0- 8 0
—Gros Colmar ...	2 0- 3 0
—English Black Hamburgh, per lb.	1 6- 3 0
—Belgian Black Hamburgh ...	1 6- 2 6
—Alicante ...	2 0- 2 6
—Muscats ...	2 6- 6 0
Apricots, crates ...	6 0- 8 0
—½ sieves... ...	8 0-10 0
English Cherries—	
—Black	6 0-10 0
—Ambers White	5 0- 7 0
—Napoleons ...	10-0-15 0
English Figs, per doz.	3 0-12 0
Belgian Peaches, per doz. ...	4 0- 8 0
English Peaches	6 0-24 0
French Cantaloupes, each ...	9 0-14 0
Gooseberries, finest, per lb.	1 0- 1 3
—Eating, ½ sieve	6 0- 8 0
—Cooking, ½ sieve	4 0- 4 6
Guernsey Melons	2 0- 4 0
Greengage Berries	6 0- 7 0
Lemons—	
—Murcia	12 0-22 6
—Messina, box ...	7 0- 9 0
—Case	11 0-12 6
Nectarines ...	12 0-24 0
Oranges, Spanish, per case ...	16 0-35 0
Pines, each ...	3 0- 7 6
English Red Currants, ½ sieve ...	5 0- 8 0
English Black Currants, per lb.	0 5- 0 7
French Black Currants, ½-sieve ...	7 0- 8 0
French Cherry Plums, per box...	8 0-10 0
Raspberries, 4 lb. chips	1 9- 3 0
South African Navel	20 0-21 0
—Seedlings ...	16 0-18 0
Grape Fruit ...	28 0-30 0
Spanish Greengage Plums, ½-sieve	9 0-14 0
—per crate ...	6 0- 8 0
Spanish Plums, per crate ...	9 0-10 0
—½-sieve	9 0-12 0
Strawberries, per chip	2 0- 4 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
Guernsey ...	1 0 1 6
Worthing ...	1 0- 1 6
Beets, new, per doz. bun. ...	2 0- 3 0
Cabbage, per doz.	1 0- 1 3
Carrots, new, per doz. bun. ...	1 6- 2 6
Cauliflower, crates, 24's, 30's ...	6 0- 7 0
Cucumber, 3 doz., 3½ doz., 4 doz....	12 0-20 0
Endive, French, per doz.... ...	— 4 0
English Lettuce, round, per doz.	0 6- 1 0
—long, per doz....	0 6 -2 0
Marrows, doz. ...	3 0- 5 0
Green Artichokes, doz.	1 0- 2 0
Greens, bag ...	1 6- 1 9
Mushrooms, lb. ...	1 0- 2 6
Mint, doz.... ...	3 0- 4 0
Onions, Valencian, cases ...	7 6- 9 0
Parsley, flat ...	2 6- 4 0
Potatos, English, cwt.	8 0-11 0
Radishes—	
Round	1 6- 2 6
—Long	1 0- 1 6
Peas, blue, bushel	3 0- 5 0
—bags (70 lb.) ...	4 0- 6 0
Spinach, bushel...	3 0 4 0
Spring Onions, per doz. bun. ...	4 0- 6 0
Tomatos, English, pink and white	6 6- 7 6
— blue	5 0- 6 0
— white	5 0- 6 0
—Guernsey ...	6 0- 7 0
Broad Beans, per bushel	2 6- 3 6
Turnips, new, per doz. bun. ...	2 6- 3 6

Remarks.—The fine weather continues to operate in favour of the fruit trade. Quantities are heavy, and the brisk demand causes values generally to remain at a satisfactory level. Cherries have sold well, except for a weak market last week end, when large quantities and late arrivals, as well as, in some cases, a soft condition of the fruits tended to lower prices. Black Currants, considering the large supplies, are selling well. Red Currants, and Raspberries also, have been in demand at satisfactory prices. Gooseberries are plentiful, the daily consignment of Leveller and other choice varieties being noticeably heavy. Hothouse fruits, such as Grapes, Peaches, Nectarines, Figs and Melons are a steady trade, and show but small variations in price level. A sprinkling of Strawberries is still available, but the quality generally is now poor. English Tomatos are wanted, and although supplies are heavy, quotations are firm. The Cucumber trade is also good. Salads are enquired for, French Beans are still realising comparatively high prices, although, with outdoor Beans coming to hand, their prices will soon fall. Mushrooms are not plentiful, and there is a demand for best "cups." Cauliflowers are a very slow trade at any price. Green vegetables are plentiful and cheap, as also are Peas.

GLASGOW.

There was an improvement in the various sections of the Market this week end, and prices generally tended in an upward direction. Southampton Strawberries are almost over for the season, and salesmen are now depending on supplies from Wisbech and Scotland. A special consignment of local grown Royal Sovereign commanded 1/3 per lb., while extra fine quality of Stirling Castle made 11d., but the average price of Scotch fruit was 7d. Southampton chips sold at 1/3, and Wisbech ranged from 1/6 to 3/-.

Tomatos are coming forward in large quantities but are of mixed quality and defective colour. The top prices for 12-lb. chips were:—Scotch, 12/-; English, 8/-; Guernsey, 7/6; and Dutch, 6/6.

A good business was done in English and Continental fruits. A consignment of Californian Canteloup Melons failed to obtain a purchaser when offered at 1/6 per case of 12. English Black Currants realised 10d. and Raspberries 8d. per lb.; Cherries, 7/- to 10/- per ½-bushel; Dutch Black Grapes, 2/3 per lb.; Peaches, 6/- per doz. and Spanish Greengages, 18/- per small hamper. Sunkist Oranges made 26/-, while New Zealand Apples returned 24/- for Sturmer Pippins and 25/- for Cleopatras. Green Gooseberries (English and Scotch) brought 3d. per lb., and Red Gooseberries 14/- per half-sieve.

Lettuces were a glut in the vegetable section, and prices ranged from 1/- for medium to 2/- for best, and Ayrshire Specials declined to 2/6. Other quotations were as follow:—Cauliflowers, 4/6 per dozen; Carrots, 4/-; Peas, 9/- per pot; and Dutch Potatos, 16/- per cwt. Cucumbers were dearer at 8/- per doz.

Cut flowers lacked variety, and there was a distinct falling off in Rose supplies. Values improved in consequence, Ophelia, Mme. Abel Chatenay and Madame Butterfly securing from 1/6 to 2/- per doz., and Mrs. H. Stevens, 1/- to 1/6. Carnations, all varieties, sold from 1/- to 1/6; Gladioli, 10d. to 1/- for 6's; Sweet Peas, 5d. to 9d. per bunch; Iris, 6d. to 9d.; and Gypsophila, 4d. to 6d. per bunch.

Obituary.

George Donald.—Throughout the north of Scotland and a wider area regret will be felt at the death of Mr. George Donald, Ladyhill Grange, Banffshire. Born in the parish where he died Mr. Donald had reached the patriarchial age of 91 years. For a long period of years he represented Messrs. Smith and Son, seedsmen, Aberdeen, with fidelity and success. A great judge of roots, Mr. Donald's services in this capacity were in great demand. At the national exhibition in Edinburgh, and at Aberdeen, Inverness, Forres, Inverurie and other centres he made the awards in the root contests, and no greater testimony to the confidence competitors had in his ability could be given than to state that he acted as judge of the North of Scotland Root and Seeds Show at Inverurie for twenty-five years consecutively. Among those with whom he did business Mr. Donald enjoyed their confidence in a marked degree. He was always willing to do a kindly and neighbourly act without the slightest ostentation. He occupied many posts of trust, and was for several years Secretary of the Central Banffshire Farmers' Club. Possessed of remarkable organising ability and initiative, Mr. Donald raised the fame of the club from comparative obscurity to one of the best organised in Scotland. Predeceased by his wife many years ago, he is survived by two sons and three daughters. One of the sons is the well-known representative of the International Harvester Company.

John Edward Perkins.—We regret to announce the death of Mr. John Edward Perkins, senior member of the firm of Messrs. John Perkins and Son, Northampton, who died at the Billing Road Nurseries of the firm on Wednesday, the 9th inst., aged 81 years, following a long illness. The firm was established by his grandfather, Mr. Edward Perkins some one hundred and twenty years ago, and the family has had an unbroken association with the business ever since. The late Mr. Perkins was taken into partnership by his father and on the latter's death he further extended the business, leasing more land for the purpose. He was a hard worker, although he never enjoyed a very robust constitution. He was the founder of the local horticultural show and a prominent member of the county agricultural society, for he was interested in farming as well as in nursery work. The deceased leaves five sons and two daughters; his wife pre-deceased him six years ago.

Alderman R. Piper.—We deeply regret to learn of the death of Alderman Piper, of Worthing, which occurred on Monday last at Oakwood, Worthing. Mr. Piper was greatly admired by the Worthing growers, whose cause he championed on many occasions, especially in the earlier years of the great industry of cultivating fruits and flowers under glass at Worthing, an industry of which he was one of the pioneers. He had reached an advanced age and was greatly honoured in the Worthing district. He was Alderman of the Sussex County Council and Mayor of Worthing in 1903-4 and 1912-13-14.

THE
Gardeners' Chronicle
No. 1961—*SATURDAY, JULY* 26, 1924.

CONTENTS.

Alpine garden—
  Dianthus Lereschei ... 57
  Erigeron leiomerus ... 57
  Mertensia primuloides 57
  Silene alpestris flore-plena 57
Alps, a novice in the ... 60
Annuals for greenhouse and conservatory decoration 63
Bog garden—
  Cimicifuga racemosa 58
  Spiraea palmata ... 58
Books, Notice of—
  The Florist's Bibliography 58
Bulb garden—
  Yellow - flowering Tulips 58
Cabbages, Spring ... 53
Dahlia as a cut flower 55
"Gardeners' Chronicle" seventy-five years ago 55
Glasnevin, notes from 61
Hardy flower border—
  Chelone 59
  Erodium pelargonii-folium 59
  Lupinus Paynei ... 59
Horticulture at the British Empire Exhibition 62
Imperial Botanical Conference 64
Moray Field Club ... 53
Obituary—
  Brook, Edward ... 67
  Fraser, Luke 67
  Kidston, Dr. Robert 67
  Wood, S. C. 67
Orchid notes and gleanings—
  Reversion in Habenaria virescens ... 57
Plant propagation, Conference on 54
Ranunculus, giant-flowered 59
Rhododendrons ... 62
Rose garden, the—
  Seedling Roses at the N.R.S.Metropolitan show 55
Societies—
  Elstree Horticultural 67
  Kent County 66
  National Dahlia ... 67
  Royal Horticultural 65
  United Horticultural Benefit & Provident 67
Truffaut's Nursery ... 54
Tubb, Mr. J. T. ... 54
Vegetable garden—
  The Parsley 64
Week's work, the ... 56
Wheat, a new 53
Wisley, notes from ... 60

ILLUSTRATIONS.

Habenaria virescens, reversion in 57
Lilium Farreri 61
Orchis maculata rosea 62
Ranunculus, giant-flowered 58, 59 63
Rose, Cecil, Single 55
Tubb. Mr. J. T. portrait of 54

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 62·1.

Actual Temperature:—
Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 23, 10 a.m.: Bar. 30.0° : temp. 66°. Weather, Overcast.

The Nature and Properties of Soils.

On the principle that a thorough exposition of a subject, though more forbidding than a sketchy one, is more sustaining, the book published by Messrs. Lyon and Buckman,* of Cornell University, may be recommended to all gardeners who desire to know the nature of the medium which they use in the cultivation of plants. They will not attempt to master all the details which are meant for the specialist, but if the reader concentrates on the essential facts he will derive much knowledge which without doubt will prove well worth having. The gardener moreover is in a position to appreciate many of the properties of soil which to the uninitiated may seem strange. He knows the truth of the authors' opening remark that soil is always changing, that it is not the same to-day as yesterday. Nor will he be surprised to find from contemplating the first diagram in the book that after all a loamy soil does not consist of more than forty per cent. mineral matter, but that half of it consists of air and water in equal parts. The average quantities of the chemical substance used by plants as raw materials in the manufacture of food is shown in the second diagram, which indicates that of the forty per cent mineral. matter the great bulk—eighty out of every hundred parts of the mineral constituent—consists of silicia, of which the plant makes no use. In every hundred parts of a good soil in the dry state the mineral constituents usable by a plant amount only to some three parts and the organic matter to four-and-a-half. Yet by these small stores, constantly replenished, the wild vegetable life of the world is sustained. No wonder, therefore that the gardener sees to it that the parsimony of nature is corrected by giving to the soil more of the indispensable mineral substances, of which it contains so little. Silicon, aluminum and iron are plentiful in the soil; sodium, of which plants all use but little, is fairly plentiful, but nitrogen and phosphorus are particularly "short." The truth is that in the process of becoming soils the rocks which produce them wear out not only physically but also chemically, so that so far as soil is concerned much of the phosphate, magnesium, calcium, and not a little of the potash is lost. Needless to say there is a compensating gain, for whereas the rock may contain no nitrogen the soil if fertile contains a fair amount. The processes whereby the rock gives rise to soil are described in the second chapter, which is followed by one on the geological classification of soils. Next, and most instructively, the "soil particle" is discussed. To the uninitiated it might seem a curious and trivial subject, but modern science has discovered some of the marvellous properties exercised by minute masses of matter and thereby has enabled the soil-physicist to understand many of the peculiar properties of soil. By perusing the chapter, the reader may learn for example, that a clay soil owes its extraordinary capriciousness to the smallness of its particles. Eighty-two out of every hundred parts consists of silt and true clay; the former made up of particles so small as ·005 mm (= ·0002 inch) and the latter of particles, the largest of which are smaller than the silt and the smallest very much smaller. The fifth chapter deals with the origin and nature of the organic matter in the soil and illustrates geographically the difference in the composition of the plant-body and soil; the chemical courses taken by the nitrogen released from the bodies of dead animals and plants until after many transitions it becomes available once again to the plant; the existence in the soil of the intermediate organic compounds which exercise toxic action on growing plants; the general influence of organic matter in the soil, and many other topics of profound interest to the cultivator. Those who do not know of recent discoveries in soil science, will do well to read attentively the chapter on the colloidal matter of the soil, for it will help them to understand the peculiarities of soils, why clays are heavy and sandy soils light, and so on. After soil structure, soil water is considered and then the water of the soil in relation to plants. The table on p. 187 is particularly instructive, indicating as it does the amount and variety of the water requirements of different plants, as measured by the amount of water which must pass through their tissues in order that they may increase their substance and yield a crop. Soil-heat, soil-air and soil-nutrients are likewise discussed, as well as soil-acidity and liming. After the soil-physics and chemistry come soil biology and this altogether admirable book closes with an account of the use of fertilizers as aids to soil fertility. It is a work which should be in every grower's library, side by side with the admirable treatises of Sir Daniel Hall and Sir John Russell of Rothamsted.

The Best Spring Cabbages for the North.—Trials of Spring Cabbages conducted by Mr. Chas. W. Mayhew for the county of Northumberland at Morpeth, Wylam, and Cockle Park, show that the earliest varieties were W. Y. Price's variety, Clucas' Early Market and J. R. Temple's variety. Other varieties suitable for cutting early were Early Offenham, Early Evesham, Early Wonder, Harbinger, Smurthwaite's variety and First and Best. W. Y. Price's variety showedpo rcentages of 50 and 59 ready for cutting on June 5 and June 3 at Morpeth and Wylam respectively, whilst Temple's variety showed a percentage of 31 and 46 respectively, ready on the same dates. W. Y. Price's variety, J. R. Temples's variety and First and Best all gave percentages of 50 ready for cutting on June 6 at Cockle Park, but in that trial they were eclipsed by Harbinger, 61.5, and Early Evesham, 61.0.

A New British-raised Wheat.—The Council of the National Institute of Agricultural Botany have decided to offer for sale this autumn approximately 2,500 quarters of a new seed Wheat, Yeoman II, bred by Professor R. H. Biffin, F.R.S., of the Cambridge University Plant Breeding Institute and introduced to take the place of the older Yeoman Wheat. Both are products of the same cross, namely, Browick × Red Fife. The yielding capacity of Yeoman II was tested by the Plant Breeding Institute on both gravel and clay soils on its farm at Cambridge. It was then tested at ten centres in different parts of the country by the National Institute of Agricultural Botany. These trials, which have been some of the most searching and accurate yield-tests yet made, show that the yielding capacity of Yeoman II is fully equal to that of the older Yeoman Wheat. The quality of the grain of the new Yeoman II has been tested thoroughly and tests in the laboratories at Cambridge have indicated that the quality is substantially better than that of the older Yeoman variety.

Moray Field Club.—The latest excursion made by the members of this Club proved very enjoyable, many rare and interesting plants being found. The pretty little fishing village of Hopeman was the rendezvous, and from thence along the Hopeman-Burghead road. Sea Purslane and the beautiful Hares-foot Trefoil were found in abundance, the pale pink flowers of the latter, with their delicate trefoil leaves, adding greatly to the beauty of the sward. Cakile maritima (Sea Rocket), Lyme Grass, and Silene maritima (Sea Campion), were common. Several patches of Habenaria viridis (Frog Orchis)—a very rare plant, and not previously recorded for the county of Moray—was also noted with interest. Dr. Gordon recorded it only for the upper parts of the old Province of Moray. The green flowers, whose petals and sepals are tinged with dark red, make it a very beautiful plant. In a cave, half-way between Hopeman and Burghead, several fine specimens of the Sea Spleenwort (Aplenium maritimum) were found. These plants were found east of Hopeman in Dr. Gordon's time, but Saturday last was the first time it had been recorded west of the village. A few plants of Mertensia maritima (Sea Gromwell) were found just on the sea edge, one of the party remarking that it was the most glabrous of British plants. It has a bluish glaucous leaf and small blue flowers. Another plant found, though growing in an unusual situation, was Goodyera repens (Creeping Goodyera). Several members took it for Lady's Tresses, but it was recorded by Dr. Gordon in 1840 as growing near Kinloss almost at the sea edge. Its usual habitat is in the damp Fir woods. Coming nearer to Burghead there were found the rare Thistle, Carduus tenuifolius in abundance. This plant is rare in the north, being recorded by Hooker for sandy places on the coast from Forfarshire southwards. It is rare on the west coast, but common in Ireland. The excursion proved not only delightful but most instructive.

---

* *The Nature and Properties of Soils.* Agricultural Science Series. Edited by L. H. Bailey. The Macmillan Co., 1922. Price 15/- net.

Presentation to a Park Superintendent.—On the occasion of the recent retirement of Mr. A. McMillan from the office of superintendent of the parks and public gardens of Fulham, his friends and colleagues presented him with an inscribed gold plate and also a gold bangle to Mrs. McMillan. The presentation was made in the Town Hall by the Borough Surveyor, who stated that the work which Mr. McMillan had accomplished during his twenty-five years with the Borough Council was remarkable. When he came there was but a small part of Bishop's Park to manage, but his duties had since included South Park. During his (the speaker's) acquaintance with Mr. McMillan he had always found him to be a man in whom could be placed implicit trust. A portrait and appreciation of Mr. A. McMillan appeared in our issue of December 8, 1923.

Milber Pine Woods.—Milber Pine Woods, the famous woods near Newton Abbot, Devon, were likely to be destroyed by the woodman's axe, but through the generosity of a resident who has offered to buy the land on which the Pine trees stand and present it to the town, together with a substantial subscription towards the cost of purchasing the trees, the woods will be saved. Subscriptions are invited for the purchase of as many additional trees as possible.

Trial of the Newer Daffodils.—Raisers who intend sending newer varieties of Daffodils for inclusion in the R.H.S. trials at Wisley during the coming season are asked to forward the bulbs to the Director on or before August 30.

"Gardeners' Chronicle" Medal.—The *Gardeners' Chronicle* Medal offered for competition at the Wolverhampton Floral Fete was awarded to Mrs. A. E. Reeves, Balfour Street, Balsall Heath, Birmingham, who had the best florally decorated table exhibited by an amateur.

Truffaut's Nursery.—We have just received an interesting brochure, oblong in form, and very nicely printed on art paper, enclosed in a stiff, cream-coloured wrapper, a souvenir of the foundation of the Truffaut nursery at Versailles a century ago. On the inside front cover is a short historical account of the establishment, which was founded by the great-grandfather of the present proprietor in 1824. The doings of each successor are briefly recorded and the plants in which they specialised receive just a short notice. The nursery, which was originally in the Rue de Noailles, has owing to railway requirements, been removed to its present locality. M. F. Albert Truffaut is the senior manager, having succeeded his father, M. Albert Truffaut, so well-known in this country for many years, and who carried on the business from 1868 until he handed over the management of it to his son quite recently. The nursery is about ten acres in area, two-and-a-half of which are under glass. The illustrations by photographic process are well executed and the family portraits are grouped under three distinct headings, viz., past, present, and future. Under the first are excellent portraits of Charles Truffaut (1795—1865) the founder, and his son Charles Truffaut (1818—1895) his successor. Under the next heading there are M. Albert Truffaut, senr., and his son Albert who followed and is now carrying on the business. M. Georges Truffaut, the other son, has founded a business of his own, the Etablissements et Laboratoires Georges Truffaut, in which chemical manures and allied products are largely manufactured for horticultural purposes. The heading "The future" contains on one page the portraits of the four little sons of M. Albert Truffaut, junior. Following these is a series of full-page illustrations of the old and present nurseries, interiors of the packing shed and greenhouses, in which large numbers of ornamental foliage plants, etc., are grown, Codiaeums, Dracaenas, Ferns, Azaleas, Cyclamens, etc. On the last page is a general plan of the establishment. Altogether it is a most interesting record of a famous French family whose name has so long been honoured in the annals of horticulture, not only in France but the world over.

MR. J. T. TUBB.

Mr. John T. Tubb.—The gardening career of Mr. John T. Tubb, who has charge of the gardens at Melton Constable Park, commenced at Rooksnest, Surrey, where Mr. J. Friend was then the gardener to the late Hon. P. Glynn. His first position as journeyman was at Addington Palace, Surrey, the old seat of the Archbishops of Canterbury, and during his stay there of two-and-a-half years the gardens were maintained in splendid condition and were noted as much for their beautiful landscape effects as for the skill with which Mr. W. Whalley cultivated Orchids. From Addington Mr. Tubb went to Eshton House, Yorkshire, and after a short stay there he was appointed foreman under Mr. Lintott in the gardens at Marden Park, the residence of the late Sir Walpole Greenwell. Here he stayed two-and-a-half years and laid the foundation of his present skill as a cultivator of fruits. Desiring to increase his knowledge of hardy flowers and water gardening, Mr. Tubb become foreman at Milton Court, Dorking, and when he had served there for a period of two-and-a-half years he was offered the post of gardener to Lady Alexander, at Oak Bank, Sevenoaks. For ten years Mr. Tubb filled this post and during that period was one of the most successful exhibitors at the Sevenoaks and surrounding exhibitions. He was also successful at several exhibitions of the Royal Horticultural Society and the National Sweet Pea Society. In 1912 he won the trophy offered for Roses at the International Horticultural exhibition. On the succession of Mr. John Walter to the Bear Wood estate, near Reading, Mr. Tubb was offered and accepted the position of gardener there. For eight years he carried on the development of the famous gardens and woods attached to Bear Wood, extended the already fine collection of trees and shrubs, and added a collection of most kinds and varieties of fruit. While at Bear Wood, Mr. Tubb took an active part in the work of the Reading Gardeners' Association, of which he was at one time Chairman. Eventually, as in the case of not a few other famous establishments, Bear Wood was sold, and in 1920, on leaving Bear Wood, his employer presented Mr Tubb with a generous cheque as a token of his regard and esteem. In the same year Mr. Tubb was appointed gardener to Lord Hastings at Melton Constable Park; here he carries on the traditions of these famous gardens, wherein, among other things, Grapes are particularly well grown and have won numerous high awards at Norwich and elsewhere. At present Mr Tubb is carrying out extensive alterations in the gardens at Melton Constable, in which the noble owners take the keenest possible interest.

Wart Disease of Potatos Immunity Trials.—The Ministry of Agriculture's Wart Disease Immunity Trials which are carried out each year at the Potato Testing Station of the National Institute of Agricultural Botany, Lathom, Ormskirk, together with the Institute's demonstration plots, Wheat trials, and the Lord Derby Gold Medal trials, will be open for inspection by the public on Thursday, August 14; the demonstrations will begin at 10 a.m. Dr. R. N. Salaman, the Chairman of the Institute's Potato Committee, will preside at lunch, and the other speakers include Sir Francis Floud, K.C.B., Secretary of the Ministry of Agriculture, Mr. W. G. Lobjoit, O.B.E., Controller of Horticulture, and Mr. F. N. Blundell, M.P. It has been arranged to provide lunch on the grounds at 1 p.m. Tickets for lunch are obtainable from the Potato Testing Station Office.

The Plum Crop.—According to the Ministry of Agriculture, this year's Plum crop, including Greengages and Damsons, compared with last year's crop, is expected to be 25% below in Cambridge, 50% below in Essex, 33% below in Norfolk, 25% above in Isle of Ely, and 15% above in Middlesex. In these counties last year's crops were extremely light. In Kent the yield is estimated to be 10% to 15% below that of last year. The prospects are very much better in Worcester and Gloucester, where the best crops were obtained last year, and it is estimated that the crops in these counties will be 10% and 20% above the average respectively. The Aylesbury Prune crop is again practically a failure. On the whole the yield of Plums is estimated at a little less than last year's crop.

Conference on Plant Propagation.—A two-day's conference on vegetative methods of plant propagation held under the auspices of the Botanical Society of Edinburgh, took place on the 17th and 18th inst., in the Royal Botanic Gardens, Edinburgh. An exhibition was held in connection with the conference, demonstrating the various improved methods by which plants may be increased from stem, root and leaf cuttings. About two hundred different plants were shown, in addition to photographs of one hundred and fifty more, and also microscopic preparations showing the origin of roots from stem cuttings. A paper was read by Miss Edith Philip Smith on "The Propagation of Clematis," and Mr. L. B. Stewart read a paper on "The Propagation of Plants with Horizontal Branches." A slide was shown of a Gardenia rooted from a cutting taken off a side branch of a plant which had not flowered for thirty years, yet the rooted plant produced blooms within two years of striking.

Sale of Official Publications in the Royal Botanic Gardens, Kew.—A new kiosk has recently been opened at the Royal Botanic Gardens, Kew, for the sale af Guides, and other publications relating to the Gardens. It is situated at the west end of the Museum of Colonial Timbers, No. 3, near the Main Entrance from Kew Green, and it replaces the former kiosks outside the Main Entrance and at the Victoria Gate.

Gift of Woodland to the Public.—The Corporation of London has accepted the offer of Col. Sir Henry Leonard to convey 35½ acres of Woodland, part of Spring Park Wood, West Wycombe, for the use of the public in perpetuity.

The Dahlia as a Cut Flower.—In its effort to popularise the Dahlia as a subject suitable for indoor decoration, the National Dahlia Society has, through its Secretary, Mr. W. Stephens, interviewed many florists in London and it is gratifying to learn that a firm in Covent Garden Market, and several prominent florists having places of business in the West End of London, have undertaken to display cut Dahlia blooms throughout the season. Several Dahlia growers have consented to supply the blooms, and it is hoped that as a result of bringing the Dahlia prominently before the public, the flower will find as much favour in this country as it receives on the Continent, especially in Holland.

Appointments for the Ensuing Week.—Wednesday, July 30: Sevenoaks Horticultural Society's show; Dorset Horticultural Society's show; Haywards Heath Flower show (2 days).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Cape Bulbs.*—I am glad to see your correspondent "Micklewell" appear again in your pages, treating on Amaryllids. I have just now a bulb of Cyrtanthus obliquus, throwing up a strong flower-scape—the third specimen I have flowered in these twenty years, and I should much wish "Micklewell" to try its pollen on those Vallotas he mentions, particularly those grown in the cottage windows, as they are more likely to seed than those we cultivate with more care in gardens. I could send him some anthers in a letter, and if the Vallotas to be dusted were placed in a saucer of water as soon as the flower-scape appeared, it would assist the plants to make seeds. It would also be desirable to plants to dust some with their own pollen, and if these did not seed nor those dusted by the pollen of Cyrtanthus, the question of the union of the two plants would still be left open. Dr. Herbert was long of opinion that the Vallota and the two evergreen Cyrtanthi would unite by their pollen, although in his arrangement he placed Gastronema between them. If "Micklewell" or any other of your readers happen to flower Brunsvigia Josephinae this autumn, I would be much obliged by a few anthers of it, cut off before they open, and folded in a packet of tissue paper to be sent in a letter, as I had lately to renew the border in which our plant of B. Josephinae grew, and I fear this has disturbed their roots so much that they will not flower this season, although they ripened ample foliage. When these Brunsvigias are growing in a free border they gladly receive any amount of water and liquid manure, also from Christmas up to the beginning of May; and so do the Haemanthi. I want the pollen of B. Josephinae to see if I can push a cross between it and Belladona; a cross which, I believe, has not yet been effected; but Dr. Herbert obtained seeds from Amaryllis blanda by the pollen of Josephinae, and as A. blanda is hardly to be met with now, I should be content with a cross from the less showy Belladona. Another pollen I am most anxious to obtain is that of Gastronema clavatum, a little African Amaryllis which I could never flower, and which is often received among Cape bulbs under the name of Amaryllis pumilio, and is said never to produce more than two flowers on a scape, often only one. There is no question now but pollen, if carefully preserved, will retain its virtue for some years. It is more than twelve years since I stated that you might gather pollen on the Alps of Thibet, carry it home safer than seeds from the same plant, and apply it successfully at home, and I have seen no reason yet to alter this opinion. If Dr. Hooker or Mr. Low had sent home the pollen of those beautiful Rhododendrons they met with in the east, there is no doubt but it would fertilise our hardier varieties here, and thus procure new crosses of great and general interest. *D. Beaton, The Gardens, Shrubland Park, Ipswich. Gard. Chron., July* 28, 1849.

THE ROSE GARDEN.

SEEDLING ROSES AT THE N.R.S. METROPOLITAN SHOW.

The statement by Mr. G. M. Taylor before the members of the Royal Caledonian Horticultural Society (see p. 50) that "of the seedling Roses shown at the recent exhibition of the National Rose Society not one was worth cultivating" rather surprises me, for several of the new varieties seemed to possess very considerable merit. The praises of the new, fragrant, white Marcia Stanhope were very general, and a lady present informed me that she had grown this Rose in her garden for two years and that it was a delightful variety, and a good doer.

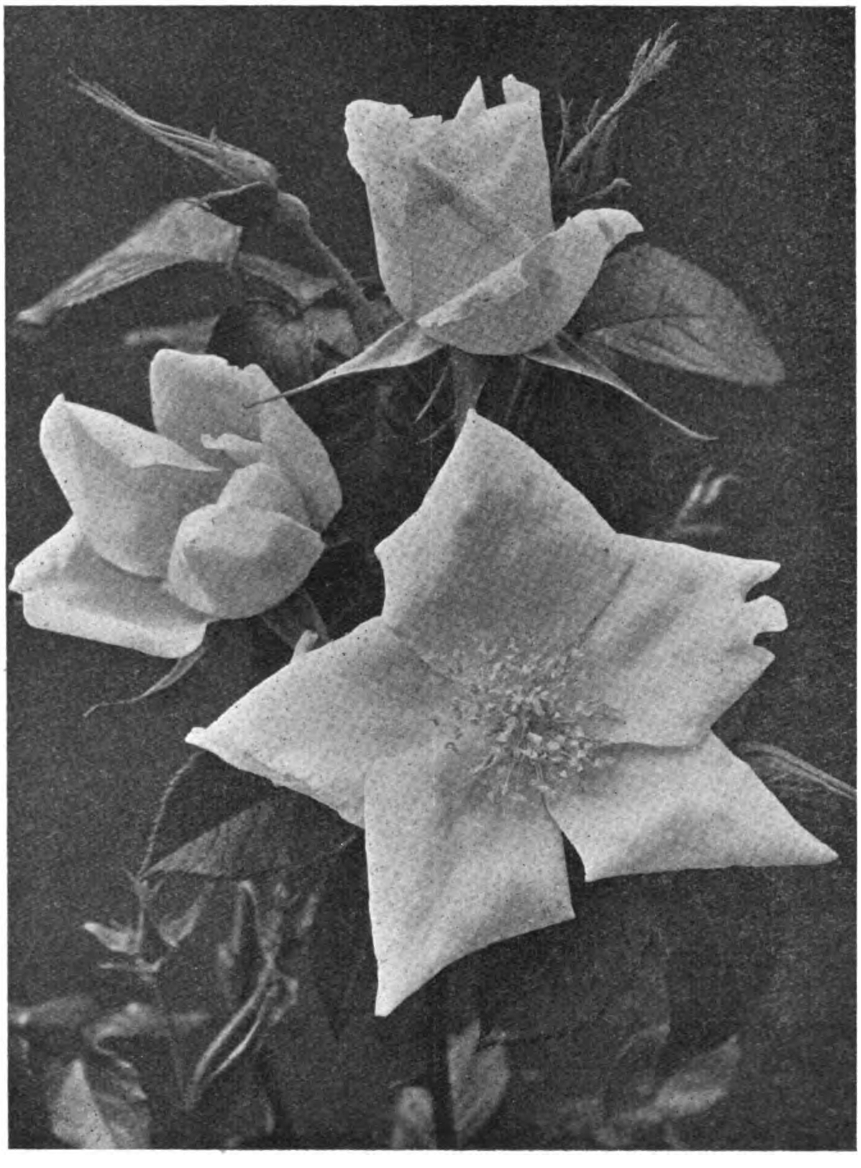


FIG. 18—SINGLE ROSE CECIL.
N.R.S. Certificate of Merit, July 27.

The new golden, single variety, Cecil (see Fig. 18) is a welcome addition to the large-flowered single type; there was evidence that the plant is very free blooming, and each of the large, expanded blossoms is accompanied by numerous pretty buds. It was somewhat unfortunate that the fine white Rose named Everest, shown by Messrs. Easlea and Sons, was so fully blown that its merits could not be determined, but from the one unopened bud it seemed to be a Rose of great promise, and the exhibitors hold a very high opinion of it, both as a garden and exhibition variety. The beautiful pink Rose, Mabel Turner, which was illustrated in *Gard. Chron.* July 12, Fig. 7, is a very full flower, but as there are so many fine pink Roses, it may not be greatly wanted. Another new pink variety was J. N. Hart, shown by Messrs. Chaplin Bros. The bloom is full-petalled and of large size, whilst the pink is a very clear tone.

Messrs. A. Dickson and Sons showed a very pretty shell-pink H.T variety named Gwynne Carr. The bloom is very shapely, the habit is very vigorous and the blooms are borne on long, stiff, reddish stems. Peggy England is a hybrid Tea variety possessing the true Tea scent. The plant is a good grower, of branching habit, and the stems bear reddish foliage. The colour of the bloom is a deep cream suffused with pale apricot. Mr. Lilley's Lucy Constable is a small decorative Rose producing its flowers in big clusters. They are sweetly scented. The colouring is salmon-rose on the outside of the petal and silvery-pink inside. Another pretty cluster Rose named Mrs. S. W. Burgess is a buff-orange colour paling towards the edges of the petals. It is a small Rose, but of exquisite form and the flowers are set off by big, leathery foliage. The value of these Roses for gardens has yet to be determined, but I think that Marcia Stanhope has already established itself in favour. *T.*

The Week's Work

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Cattleyas.—Cattleya Bowringeana, C. labiata and the many hybrids that make new growths during the summer and flower in the autumn, are making considerable progress. It is advisable to grow the plants near to the roof-glass at this season in order that they may consolidate their new growths. Watering should be done liberally, but as soon as the pseudo-bulbs are matured the water supply at the roots should be reduced considerably, for if these autumn-flowering Cattleyas are overwatered at this period it frequently causes the pseudo-bulbs and roots to decay. As plants of Cattleya gigas, in its many varieties develop their flowers they should be afforded a little more water at the roots. After passing the flowering stage they should be exposed gradually to more sunlight, and the supply of water at the roots gradually decreased. Specimens that require re-potting should be attended to when the last made pseudo-bulbs commence to develop new roots from their bases; they should be given only sufficient water to prevent undue shrivelling. When they are re-established, they should be allowed a long season of rest. Cattleya Dowiana and C. Dowiana aurea may also be potted as they pass out of flower, and should be treated in a somewhat similar manner to C. gigas, with the exception that, during their resting period, they should be placed in a position near to the roof-glass in the lightest and warmest part of the Cattleya house.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

The Rose Garden.—There is much that needs attention in the Rose garden at this season and every effort should be made to keep the plants clean and in perfect vigour. Many varieties have already borne their first crop of flowers, and are making good growths for the production of the late summer and autumn crop. A light sprinkling of guano well watered in the soil will help the plants materially. Amongst the ramblers the pruning of the early-flowering varieties calls for attention as they pass out of flower. It is not possible to treat all climbing Roses alike, and where large pergola areas have to be covered it is not posssible to simply cut out all previous year's growths and lay in the current year's shoots: a selection of previous year's wood must, therefore, in most cases, be retained for extension furnishing.

Seed-saving.—The practice of saving seeds from home-grown plants has many advantages, and seeds of many hardy border and rock plants, gathered so soon as they are ripe and sown immediately, will germinate quickly and make excellent plants for next year's permanent planting.

Spring-flowering Bulbs.—Such bulbs as Hyacinths, early Tulips and Narcissus, which have been lifted for ripening, should be graded ready for planting; planting the offsets or small bulbs in the reserve garden, and storing the flowering bulbs for autumn planting. Late Tulips, which were laid in when the beds were cleared for the reception of the summer bedding plants, should also be lifted and exposed to the air for ripening.

Lilium candidum. The Madonna Lily is one of the most charming of old-world flowers. If existing clumps are doing well it is not wise to disturb them, but if they show signs of exhaustion they should be overhauled and replanted immediately after flowering. Although bulbs of this Lily are frequently offered for sale in winter and even in spring, this is not a suitable time to plant, and any bulbs planted after August stand little chance of flowering the following year. L. croceum should be planted immediately after flowering, as also should the brilliant varieties of L. elegans. None of these Lilies is stem rooting, hence deep planting should not be practised.

General Remarks.—The continued drought has had an unusually disastrous effect on many of the occupants of the herbaceous borders. The abundant rainfall of early June encouraged plants to make luxuriant growth and thus create a large foliage surface. The excessively drying winds and bright sunshine of the past few weeks have caused excessive transpiration, and on light, sandy soils, where the store of water is never very high, this has become exhausted and the plants are suffering. Under these conditions copious waterings and mulching are necessary.

HARDY FRUIT GARDEN.

By R. W. THATCHER, Gardener to MARK FIRTH, Esq., Carlton Park, Market Harborough, Leicestershire.

Strawberries.—Ground in an open, sunny position should be selected for planting a new bed of Strawberries. Land from which Kales or Broccoli have been cleared is suitable. If the soil is of a light texture, plenty of cow manure should be dug in, as this will help to conserve the moisture in dry weather. Strawberries grow best in rich, moist soil, which should be dug at least two spits deep, placing plenty of manure in the bottom trench as well as in the top one. The surface should be broken as finely as possible, and when planting time arrives raked down after a shower of rain. In the case of heavy soils, work in half-rotted horse manure and plenty of wood ash, road scrapings, and anything else that will tend to make them porous. Although the Strawberry likes plenty of moisture, it will not tolerate a badly-drained, wet soil. Runners that have become well-rooted may be severed from the parent plants and placed in a semi-shady position for a few days and kept well watered.

Trees on Walls.—Any shoots needed for extension should be nailed in after the trees have been summer pruned, otherwise rough winds will tend to snap them off. Plenty of shoots should be retained on Apricot trees, as these are apt to die off a branch at a time, especially after fruiting, and a vigorous, young shoot will soon fill up the empty space. Cherries that have finished fruiting should be well syringed to keep the foliage clean and healthy, and the roots kept watered if the weather is hot and dry. A little extra attention in this respect will be well repaid another season. Keep a careful watch on Plum trees for aphis, and as soon as the pest is detected syringe the trees with Quassia extract diluted with rain water. This preparation is quite harmless, but, of course, should not be used on trees where the fruits are ripening or it may give them a bitter taste. Young shoots on Peaches and Nectarines should be nailed in and where there are sufficient growths some should be tied to the leading branches. This will protect the old wood from the sun, and also give the trees a well furnished appearance. Keep them well syringed and watered feely at the roots, and, above all, well mulched with rotten manure, as, growing on south and west walls they are exposed to the drying influence of sun and wind during July and August, and need protection more than trees in other positions. Where choice fruits are required it pays to thin the crop on trees that are bearing freely.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Chrysanthemums.—If the compost advised in a previous calendar was used for the final potting of Chrysanthemums, it should not be necessary to apply stimulants to the plants until six weeks after that operation. By that time, however, feeding should be commenced. Should showery weather prevail a start may be made by applying a light dressing of "Clay's Fertilizer" or "Le Fruitier" to the surface of the soil, in the proportions of about a dessert spoonful to a nine-inch or a ten-inch pot. This application should suffice for a week or ten days. After this weak clear soot-water applied daily for a week to those plants requiring water, is a safe and effective liquid stimulant to start with. I prefer this method of using soot water, rather than withholding it altogether for three weeks, and then applying it oftener and irregularly. Through the intervening weeks, liquid manure from the stables or cowsheds alternated with well diluted guano water may be used, gradually increasing the strength of the stimulants as the plants demand it. Occasionally, and for a few days, clear water only should be given. Any plants which have become excessively dry should first be watered with clear water, before applying liquid manure.

Feeding of Other Subjects.—Plants of Campanula pyramidalis, also of Liliums, growing in pots and now coming into flower, require assistance by frequent applications of weak liquid manure. Tuberoses which are throwing up their flower stems should be fed liberally. Autumn-flowering subjects such as Salvia, Libonia, Moschosma, and Clerodendron, unless supplied with liquid stimulants during hot weather will become stunted and disappoint the grower.

Malmaison Carnations.—If the layering of these plants has not been completed the work should be done forthwith with a view to getting the rooted layers established in small pots by the early autumn. The one-year-old plants required for next season's flowering should be re-potted if not already done. Do not use an excessively rich compost for these plants; good fibrous loam mixed with old mortar rubble and coarse grade oyster shell is suitable.

Bulbs for Forcing.—Success with the early forcing of such bulbous plants as Freesias, Roman Hyacinths, Paper White Narcissus and Tulips, depends very largely upon the securing of well-ripened bulbs and potting them early. If orders have not already been placed for the bulbs required they should be sent without further delay. Lovers of blue flowers should secure bulbs of Iris tingitana; these, if potted in early September and grown for the greater part of the time in a cold frame, may be flowered in a cool house by Christmas.

FRUITS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Cucumbers.—To satisfy the daily demand for Cucumbers it is advisable to make frequent sowings. The present is a suitable time to make another sowing to raise plants for cropping well into the autumn. The seeds are best sown in small pots and the soil should not be made too firm to receive the seedlings which, when they require to be shifted on into larger receptacles, may have a firmer rooting medium, consisting of rough turfy loam mixed with old mortar rubble, burnt ash and a little bone meal. The plants should be grown in a moderate temperature near the roof-glass to ensure short jointed shoots, until they are ready to be planted out in a border or on mounds. The latter should not be made too large at first. Cucumbers may be earthed up with rich soil when they are in full bearing and require some aid to keep them in a healthy condition. As the plants grow and the young roots appear on the surface, top dressings of soil should be applied on frequent occasions until the plants come into full bearing, in preference to using stimulating manures. Cucumbers require an abundance of water during hot, dry weather, but during dull, sunless times care should be exercised in applying water to the roots.

Peaches and Nectarines.—So soon as the midseason Peach and Nectarine trees have been cleared of their fruits it is advisable to take out the old fruiting wood to allow the sun and air to circulate freely among the trees, and the ventilators should be opened to admit an abundance of fresh air. The roots should never be allowed to suffer through lack of moisture, as errors in cultivation may be traced to this alone. If the trees are young and vigorous, care must be exercised in feeding them with stimulants or the wood will become coarse and sappy and fail to ripen properly. On the other hand where the trees have cropped heavily and show signs of weakness, they may be fed with an approved fruit fertiliser and be watered occasionally with liquid manure to assist them to plump up their buds. Keep the trees clean by syringing them on frequent occasions in the evenings of hot bright days, and, if necessary, use an insecticide.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Potatos.—Early varieties of Potatos may be lifted and the ground cleared for another crop. Select the seed tubers for another year and expose them in boxes to the full sunshine. Potatos greened in this way keep well through the winter and sprout sturdily the following spring.

Herbs.—Herbs that are required for drying for winter use may now be cut: the best time for harvesting them is when the plants are coming into flower. Cut the shoots when they are quite dry and hang them up for a few days in a shed through which a free circulation of air passes.

Jerusalem Artichokes.—These will now be a fair height, and as the shoots are often broken and damaged by high winds, the latter should be shortened to about four feet. Cutting off the tops of the shoots will not interfere with the development of the tubers but rather cause them to increase in size.

French Beans.—A suitable number of 9-inch pots should be filled with good soil and five to six beans sown in each pot. The seeds may be germinated in a cool frame and afterwards, as the evenings get cooler, the pots should be transferred to warmer quarters.

Tomatos.—Plants growing in 8-inch pots and intended for late cropping should receive attention. When the plants have formed three to four trusses of fruit the tops should be removed. Feed the roots regularly once every week with liquid manure.

Globe Artichokes.—Where the plants are bearing well, a good mulching of well-rotted manure may be placed round the roots and thus help to prolong the cropping season.

Lettuce.—As soon as seedling Lettuces are fit to handle they should be placed in frames. Allow plenty of space between the plants, for when air circulates freely between Lettuces they are not so liable to damp off in cold weather.

Early Peas.—When this crop is finished the ground should be cleared and dug. A successional crop of Turnips or Turnip-rooted Beetroot may be sown on the ground with satisfactory results.

ORCHID NOTES AND GLEANINGS.

REVERSION IN HABENARIA VIRESCENS.

Early in June some curious specimens of the above British Orchid were exhibited at a meeting of the Scientific Committee of the Royal Horticultural Society, by Mr. Percy F. Bunyard. I had the pleasure of examining the two malformed plants, and found their condition due to the reversion of the androecium and gynoecium (fig. 19).

The sepals, petals, lip and spur were quite normal, except that the lowest flower on the spike had given rise to a secondary spur, about one-fourth inch long. On the posterior side of the flower were three anther cells on each side of the disc, with stalked pollinia and glands. This meant three anthers in the normal position, but arranged concentrically, the innermost and youngest pair being slightly smaller than the oldest and outermost pair.

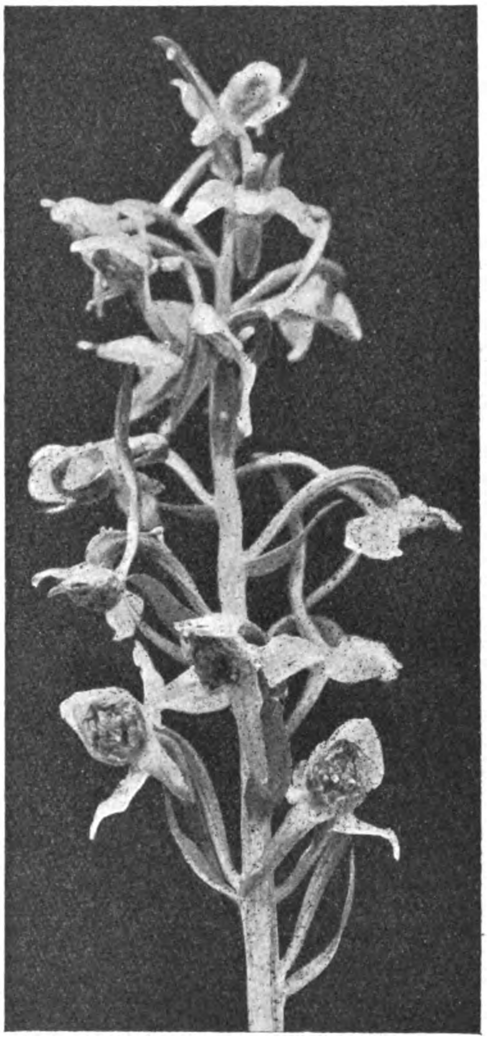


FIG. 19—REVERSION IN HABENARIA VIRESCENS.

On the anterior side of the flower were two small pollinia, with their stalks and glands reversed and directed towards the axis of the flower. These anterior pollinia represented staminal leaves that had arisen on the opposite side of the floral axis. The connective of the wide stamen in this Orchid appeared like two small green leaves, but which were really one deeply bifid, staminal leaf, bearing the anther cells on their outer margin. The stigmas appeared to be represented by fleshy knobs, and in one flower a fleshy structure looked like a three-lobed stigma. Twelve other flowers were similar, the anterior anthers varying in number and being more or less perfect. The fourteenth flower had only two pairs of anther cells on the posterior or normal side of the floral axis. *J.F.*

ALPINE GARDEN.

SILENE ALPESTRIS FLORE-PLENA.

This catch-fly is a first-rate alpine and very easily established in any gritty soil in the sunny alpine garden, where it will quickly spread into large masses. The dainty, slightly fringed flowers are of a pure, glistening white, and they grow to a height of from four to six inches.

Associating well with Androsaces, Dianthi and other alpine gems, this delightful and very "easy" plant should be included in all rock gardens.

The flowers are persistent and the plant is most easily propagated by division.

This Silene is a most delightful plant when grown in a pan in the Alpine house. *Ralph E. Arnold.*

MERTENSIA PRIMULOIDES.

The Gentian-blue flowers of this delightful little plant are a prominent feature of the June rock garden. Mertensia primuloides is perfectly hardy in a well-drained, deep soil, and spreads rapidly in a sunny situation, soon covering a considerable area by means of its underground stems.

The greyish-green leaves make a splendid foil to the clear blue flowers, which are produced on stems nine inches in height.

The plant is herbaceous and easily propagated by division.

ERIGERON LEIOMERUS.

This charming little Composite is a native of the higher altitudes of the Central United States. It is an ideal subject for the rock-garden, or for associating with any collection of diminutive plants.

The spoon-shaped, dull-green leaves make a tuft some two inches in height, and the little flowers arise just clear of the foliage. These are large for the size of the plant, deeply rayed, and of a lovely shade of pale lavender-blue. The flowering season extends from the end of May onwards for many weeks.

Though E. leiomerus is said to need moraine treatment, I have grown it very successfully in a moderately cool pocket filled mainly with granite chips and old leaf-mould. *J.*

DIANTHUS LERESCHEI.

Mr. Arnott, on p. 21, gives an interesting note of Dianthus Lereschei, Burnat. This plant is rather rare, as he states, and is seldom grown under its right name. It was found in July, 1847, by the Rev. Leresche of Lausanne under the Col. de l'Arietta in the Grayan Alps (Italy). The Val Campiglia where it grows is a real paradise for alpines. Mr. Lanza gave us a good description of the treasures he found there ("La flora del Valprato," in *Bulletin de la Societe Botanique d'Aoste*, 1920). In August, 1905, I went there to seek this curious Dianthus and found it just under the Col. de l'Arietta growing all over the pastures in very large tufts, much broader than those of D. caesius, its cousin. Burnat (*Flore des Alpes-Maritimes*, Vol. 1, p. 230) keeps it as a form of D. furcatus, distinct from the type by its always one-flowered stalks, its shorter calyx and its petals being light lilac with a pink zone, and denticulate. To my way of thinking, the most apparent difference is that it makes large tufts, often three feet broad, which is never the case with D. furcatus or even D. caesius. These broad cushions are covered with flowers from the end of June until the end of August. They always grow on green pastures and good meadows, very sunnily situated, between Sempervivum Allionii, Androsace obtusifolia and Thlaspi Lereschei, Burnat. *H. Correvon.*

NOTICES OF BOOKS.

The Florist's Bibliography.*

THOSE who possess the first and second editions of the *Florist's Bibliography* will be glad to add the second supplement, now published. The author, Mr. C. Harman Payne, has always taken a keen interest in floricultural literature and possesses an extensive library of floral works. Many years have passed since the first issue of his useful book appeared—in 1908—but Mr. Harman Payne has not rested upon his oars, for year by year he has kept accounts of the published books dealing with floriculture and at intervals has published the accumulated account. In the Second Supplement there are forty pages, including an index of authors. The books dealt with are chiefly those published during the past eleven years, and these are classified under suitable headings, such as Alpines, Annuals and Biennials, Aster, Auricula, Bulbs, Cactus, Camellia, Carnation, Pink and Picotee; Chrysanthemum, Cyclamen, Dahlia, Hardy Flowers and Perennials, Paeony, Pansy, Viola and Violet, and Sweet Pea. Other sections include publications on Floral Art, Flower Lore, Flowers in General, and the Flower Garden. Altogether the author has listed nearly three hundred publications, some few of which, however, are of fairly distant date, but perchance had not previously come within the author's knowledge. Of these there are the two works of Robert Tyas on *The Language of Flowers* and *Flowers and Heraldry*, published respectively in 1875 and 1851; Samuel Wood's *Modern Window Gardening*, 1884; Chas. Malo's *Guirlande de Flore*, 1815; John Edwards' collection of one hundred plates of exotic and British flowers, 1775; five German works on the Dahlia, 1840, 1842 (two), 1850 and 1853 respectively; while Robert Furber's coloured plants (1730) and his *Short Introduction to Gardening*, 1773, appear to have been omitted from previous issues.

This Second Supplement to the *Florist's Bibliography* appears to have been prepared with that extreme care which characterised the author's previous efforts and it is of first rate importance to all who delight in florists' flowers and are interested in the literature associated with them.

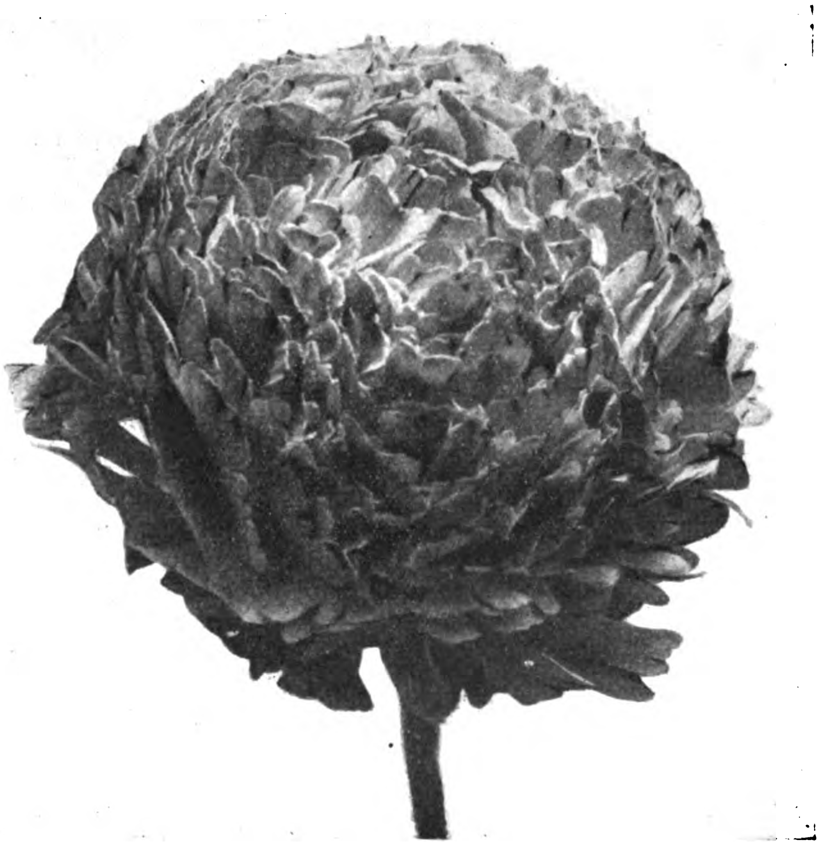


FIG. 20.—GIANT FLORENTINE RANUNCULUS; ERECT-PETALLED TYPE (see p. 59).

BULB GARDEN.

YELLOW-FLOWERING TULIPS.

MR. JACOB's note on p. 32 on Yellow Tulips contains one or two statements that cannot be allowed to pass unchallenged. He states that in one variety—I cannot be certain to which he refers—the bases vary. "Some are very dark and some pure yellow." He asks whether some one can account for this. The answer seems perfectly obvious. He must have had two varieties mixed together. It is no answer to say that the flowers are otherwise exactly alike, for that may easily be the case. Anyone who has raised numbers of Tulips from seeds will, I think, agree that from one capsule numbers of very similar varieties are often obtained, differing only from one another in their bases. This year I had in flower some thousands of new seedlings and there are among them a number of instances of this basal variation.

On the other hand, the very fact that Mr. Jacob thinks these yellow Tulips with varying bases remarkable shows that he expects each garden variety of Tulip to have a distinct basal colour or pattern. The fact is, of course, that each variety of garden Tulip has arisen from one original seed. At the end of the first summer after germination there was one small bulb at the end of the seed-leaf. At the end of the second season this bulb had been replaced by another twice its size. By the following July there were probably two droppers as well as a bulb. And so the process goes on until in the sixth and seventh year there are two or three flowering bulbs and a number of smaller ones. Why Tulips have the curious habit of sending out stolons or runners, usually vertically down into the ground, and of forming bulbs at the end of these stolons, instead of using up all their energies in the formation of one strong flowering bulb, is not known, but there is no doubt at all that all offsets and stolons form bulbs which, when they flower, produce identical flowers with the same basal pattern or colour.

Mr. Jacob's statement that Tulipa Fosteriana has an "uncertain base" is, of course, true, but then so has every wild Tulip species which is multiplied by seeds and not by offsets from the bulbs. In the wild state, such species as T. Fosteriana, T. Greigii and T. Kaufmanniana, probably, never increase by offsets at all. A bulb flowers and its seeds are scattered by the winds and it flowers again in the next and in the following years until it has exhausted all the nourishment within reach of its not very extensive root system. Then, naturally, it dies, but in the meantime its seedlings have grown to flowering size and are ready to carry on the species.

In cultivation T. Fosteriana increases very slowly by offsets, and I have several little groups of bulbs obtained in this way. In each case there is a characteristic basal pattern which is constant in all bulbs obtained as offsets, though differing more or less from that of the next group. On the other hand, I have also raised T. Fosteriana from seed, and then each seedling has a distinct basal blotch or pattern. The same holds good of T. Greigii, T. ingens, T. Tubergeniana, and in fact of any species in which there is any basal blotch or pattern. Each seedling is a distinct individual, differing more or less from all other individuals, while each offset is part of an original bulb and reproduces its flowers without any variation.

I sometimes wish I could bring myself to settle down to grow complacently the varieties of Tulips and of other flowers which I may find listed in catalogues, but, as the years go on I find that I grow fewer and fewer of the named varieties. This year, among some thousands of Tulips and hundreds of Irises, there were very few that have names. Nearly all are numbered seedlings, and among at least half-a-dozen good yellow Tulips the best are, strangely enough, seedlings of La Tulip Noire, which seems to be one of the best parents among all the Darwin varieties. *W. R. Dykes.*

BOG GARDEN.

SPIRAEA PALMATA.

FEW plants are more attractive than S. palmata; the deep purple red of the stems and branches passes into the crimson of the broad corymbs of flowers, which rise gracefully above the handsomely lobed tufts of foliage. A more effective plant could not be selected from the numerous bog plants, and it continues in flower for some considerable time. As a foliage plant it is most decorative; the variety alba produces flowers of the most snowy whiteness, while elegans has corymbs of very pleasing shell-pink flowers. All three forms should be included in all waterside plantings. The plants grow to a height of from two-and-a-half feet to three feet.

CIMICIFUGA RACEMOSA.

THE snow-white, branched and drooping spikelets of Cimicifuga racemosa, in elongated racemes, are most attractive. It is a very desirable plant for the moist and partially shaded parts of the Water Lily pond or lake, attaining a height of two feet to three feet, with an abundance of glossy, biternate foliage. *W. Logan.*

---

* *The Florist's Bibliography.* Second Supplement. By C. Harman Payne. Wheldon and Wesley, Ltd., 2, Arthur Street, New Oxford Street, W.C. 2. Price 3s. 6d.

GIANT-FLOWERED RANUNCULUS.

Visitors to the great International Exhibition held at Ghent in 1923 will remember the remarkable display of giant-flowered varieties of Ranunculus exhibited in one of the upper rooms by Dr. Ragionieri of Florence. In size, substance, and variety of colouring these handsome flowers surpassed anything of their kind previously seen. Dr. Ragionieri has been good enough to send photographs of some of his flowers, and these are reproduced in Figs. 20, 21 and 24.

This giant-flowered race has been produced by selection and inter-crossing and demonstrates the capabilities of variation and improvement to be found in wild flowers—in this case Ranunculus asiaticus. Dr. Ragionieri states that a single-flowered, wild form will show great improvement in a few generations if successive sowings and selections are made: semi-double and double forms will soon arise, often with the centre of the flower carrying a distinct colour from the rest of the bloom, as in varieties of the so-called R. africanus. By continuing the work of selection the characters of the Persian and French Ranunculus are produced. He suggests that varieties of the so-called R. africanus represent an early stage in improvement in the forms of R. asiaticus found in Africa, where the species is widely distributed.

The date of the introduction of garden Ranunculuses into Florentine gardens is not known, but it is certain they were grown extensively in Florence in the sixteenth century. In the Grand-Duchy gardens of Bobli, Castello, and Petraia they have always been the subject of assiduous care with regard to cultivation and selection. For four generations members of Dr. Ragionieri's family have worked continuously on the improvement of these beautiful flowers and the work covers a period of one hundred and thirty years; for the last half a century Dr. Ragionieri has himself continued the improvement and has brought the strain to perfection hitherto unknown, until now perfectly double flowers from ten to fifteen centimetres in breadth are easily produced under good cultivation.

At Florence the roots are planted in September and October in a sheltered position. The soil is well worked and freely manured with decayed stable dung. The roots are placed twenty centimetres apart and from four to five centimetres in depth. The Ranunculus appears to dislike both excessive drought and excessive wet, especially if of long duration, and shows a great objection to continued wet weather during the cold season. In more northern countries where the winters are very cold the best time for planting would be at the end of February or the early days of March.

Dr. Ragionieri's strain of Ranunculus has been cultivated in England for at least ten years. In 1912 a small parcel of roots was offered for sale by Messrs. Protheroe and Morris and Mr. E. E. Evans of Cheltenham recently informed Dr. Ragionieri that his plants of this strain grow quite two feet high, almost like Dahlias. For the provision of handsome flowers in late spring these Ranunculuses are extremely valuable, and no doubt they could be cultivated very successfully in suitable soil and sheltered positions in England and Ireland.

HARDY FLOWER BORDER.

CHELONE.

Apart from the valuable plant formerly known as Chelone barbata, but now called Pentstemen barbatus, there are but three species of Chelone in cultivation in this country, and one of these, C. Lyonii, does not appear to be common in commerce, and another, C. glabra, is not very plentiful. All are natives of moist places, even growing in swamps, and the poor, dry unmanured borders in which they are frequently planted results in slow starvation and want of vigour. In poor, dry soils they will endeavour to find richer fare by spreading at the roots, but, even with the additional nourishment they thus secure, they are not nearly so good as when planted in rich, moist, well-manured soil.

Chelone glabra is a good plant, although I prefer C. obliqua. C. glabra grows from one to three feet in height, and has heads of flower, which, in what is sold in nurseries as the type, is pinkish. A white variety is also sold under the name of C. glabra alba, but this would appear to be more common in a wild state than the pink one. C. glabra has a widespread, native habitat, ranging from Florida to Newfoundland and from Kansas to Manitoba. In the United States it has several popular names including Turtle Head, Snakehead, Shell-flower, Cod-head, Bitter-herb, and Balmoney. It is a good border plant when well grown, and flowers in July, August, and September, when flowers of its character are not very plentiful. It grows in swamps and by stream sides.

Chelone Lyonii, Lyon's Turtle Head, is a species from North Carolina and Tennessee to Georgia, where it grows in wet thickets and swamps. It attains about the same height as the preceding plant, and above its rather ovate-acuminate leaves bears heads of rose-purple or red flowers.

Chelone obliqua, like the others, flowers from July to September, is dwarfer, and generally ranges from one to two feet high. Cultivated in poor soil, I have seen it not more than nine inches high. It has rather oblong acuminate leaves and heads of red or rose-purple flowers. There is also a pretty white variety, C. glabra alba. It is a native of America from Virginia to Illinois and so far south as Florida, and is found in wet thickets and by stream sides. It is quite easy to cultivate in this country and all three species are hardy under reasonable conditions.

Chelones may be propagated by division after flowering or by seeds sown in spring under glass. *S. Arnott.*

ERODIUM PELARGONIIFOLIUM.

This Erodium is worthy of a place in the front of the flower border or in the rock garden if only for its long season of flowering and ease in cultivation. E. pelargoniifolium usually develops the first of its flowers in March and from that time onwards it continues to bloom more or less profusely until late autumn. The pinky-white flowers, faintly lined, are about one inch across and they are produced in large, lax heads which, with the hairy, deep-lobed leafage rising to some eight inches, give the plant a remarkably close resemblance to some scented Pelargoniums. This Heron's Bill is one of the few of its genus which is said to flourish in stiff clay. In most gardens it seeds freely so that if the old plants perish there will generally be plenty of seedlings to take their places. J

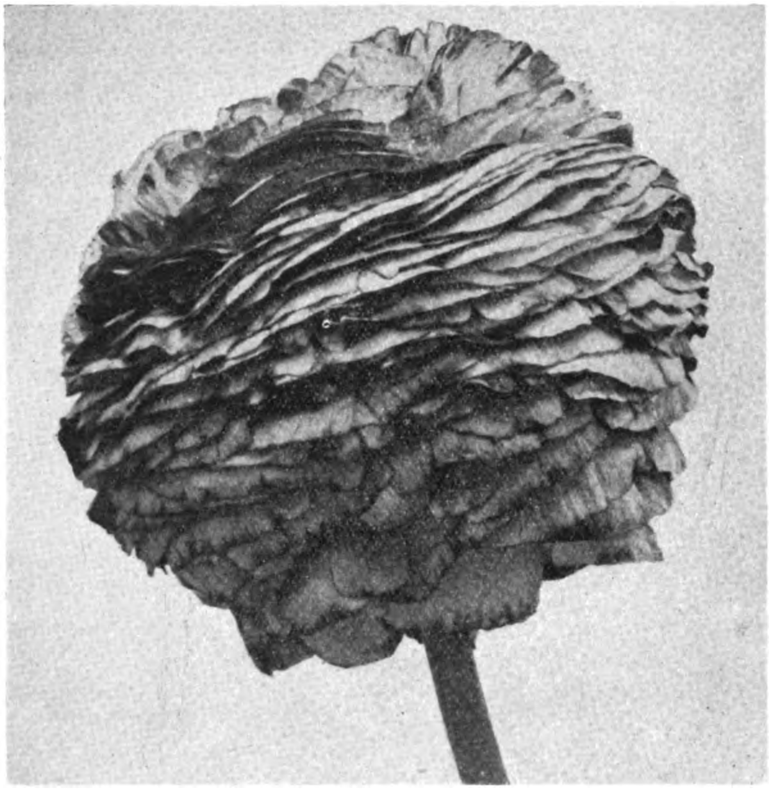


FIG. 21.—GIANT FLORENTINE RANUNCULUS; SHOWING DEPTH OF A BROAD-PETALLED FLOWER.

LUPINUS PAYNEI.

This species was discovered some half-dozen years ago in South California, and has been described as the most remarkable Tree Lupin in the world, the flowers being in many beautiful shades—lavender, pale lilac, dark blue, purple, rose-pink, flesh pink or white, all having a yellow blotch on the standard, and deliciously scented. Perhaps a single year's experience with a plant that shows so great a diversity in colour is of little value, but I must confess to some disappointment when the flowers of my specimen turned out to be small, rather a weak pink and without the yellow blotch. The red stems, foliage and habit are, however, distinctly attractive, and as the flower spikes are long, very freely branched and all bloom at about the same time, the effect is good if not striking. Some years ago I raised a batch of seedlings of L. Paynei, but subsequently lost them all. That was in the very severe spring of 1917. Perhaps some readers of *The Gardeners' Chronicle* have been more fortunate. If so it would be interesting to hear of their experience, especially in regard to the colour. *A. T. Johnson, Talycafn, N. Wales.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

A NOVICE IN THE ALPS.—I.

THE ROCK GARDENS OF THE SUSTEN PASS.

ALL the way over the Susten Pass from Wasen on the St. Gothard line to Meiringen are innumerable natural rock gardens. They are of all sizes and degrees of elaborateness and every one is an object lesson in the way of making and planting a rock garden. There is no gardener however experienced but might learn much from the garden architecture of this wonderful pass. From Wasen, which is about three thousand feet above sea-level, the ground rises abruptly so that the walker—and happily all who cross the pass must walk—starts at an altitude of about three-thousand-five-hundred-feet, and thereby shakes off a good many of the valley plants, which are apt to form a motley throng—undesired companions to him who seeks the select society of true alpines. Even those plants of the plains which do adventure beyond the three-thousand-feet limit are, perforce, by the poverty of the ground compelled either to struggle with one another in the thin meadowland or to adopt a rock garden habit. Thus the undergrowth of the pasture grass is blue with Campanulas; some from the plains, C. persicifolia and C. rapunculoides, and some which belong alike to plain and mountain. Except for little particles of pasture all is natural and uncultivated, and thanks to the poverty of the ground and the impossibility of road making, man has all involuntarily helped nature to lay out the rock gardens of the pass. For he has been obliged to build granite walls of loose boulders along the bridle path and in these walls sub-alpine plants have ensconced themselves. In every crevice Sempervivum Tectorum in great variety of form makes cushions which may be a foot across. S. arachnoideum is there too, but less common and along the top of these almost natural walls a yellow and blue Viola forms an all but continuous border. And so the way is made pleasant up to the alpine region which begins near Fernigen (4789 feet) the last village this side of the pass. There on the left granitic flank of the enclosing mountains the "alpenrosen" (Rhododendron ferrugineum) grow in luxuriance and give a red tone to the hill side. From the hills on the other side it is absent, for this species is, like most Rhododendrons, chalk-shy, and since the path up the valley gives access for the most part to granite hills, R. ferrugineum is to be found to the complete exclusion of the other alpine species, R. hirsutum. The latter species loves the chalk, and why those who care for Rhododendrons and cannot cultivate the aristocrats of the genus do not plant plenty of the rather plebeian, but very lovely, R. hirsutum, is certainly a puzzle. There can be, indeed, but few gardens in England where either of the two alpine species is grown. Yet both are beautiful, and given the right conditions should thrive and form a fine setting for other plants. In the moister places the white-flowered Ranunculus aconitifolius is not uncommon. Then just after the five thousand feet level is passed, Primula farinosa appears in dainty profusion and every tone of colour from pale mauve to almost crimson. It, however, does not love the high altitudes, and perhaps at six thousand feet or a little more it lingered and presently left us to pursue our upward way alone. Whenever in the P. farinosa habitat the ground became yet moister, Pinguicula vulgaris showed its flowers—violet or violet with white spots or white—and its rosette of yellow fly-catching leaves. The small insects which it digests were, however, not numerous and so many Pinguiculas were rationless. Yet they flourish as though to proclaim the virtue of abstemiousness. Where P. farinosa stops, or soon after, Primula viscosa begins and once begun it continues to possess every cranny where moisture is to be had, up to the summit of the pass (7,420 feet). In range of colour and in form of inflorescence this true mountain Primula is even more varied than its predecessor of the lower slopes. It even forms albinos—as do so many wild plants—and one such white-flowered specimen came our way and shall, if fortune permits, grow in our Oxfordshire rock garden. Before P. viscosa began the small-flowered Gentian, which should be verna except that it is flowering in July, appeared suddenly on a flat expanse of ground in a wet plateau, its flowers far deeper than the blue of the sky. Higher up was the larger Gentiana acaulis with its fine blue trumpets and with it and the Alpine Roses which grow and seed better at the higher altitudes, was the very beautiful sulphur Anemone, A. sulphurea the granite abiding counterpart of the white flowered A. alpina, which frequents the chalk. The botanists say that alpina and sulphurea are one species, and judging by their long, rose-red coloured beards (chamois beards) formed by their ripening fruits, they are indistinguishable except by the fact that A. alpina is white; the more interesting therefore that these two forms should divide the granite and the limestone between them, each taking one and eschewing the other. Drifts of Trollius europaeus flowering now when English grown Trollius are long over, show the severity and lateness of spring in these high Alpine regions and remind the botanist that the nearest native Trollius of these Swiss ones are those of England, the intervening land refusing to support them. High up beyond the six thousand feet level the cushion plants become plentiful and of them all in this region, the lime shy "Cushion Silene," Silene exscapa Allioni, a true alpine, deserves to be distinguished. Its near ally, S. acaulis, though a good enough cushion plant, is a rough fellow in comparison with this most beautifully groomed species, the leaves of which are so small and so social that their tops form a smooth surface, and even the little pink stars, which are their flowers, scarcely project above the surface of the cushion. In spite of the pinky flowers S. exscapa is a gem which should adorn every rock garden which can offer it a limeless soil. There, and also winding up hill all the way we were met above six thousand feet by Soldanella pusilla, the bell-shaped, fringed edged, mauve flowers, suggesting the helmets of a fairy soldiery guarding the pass. There, rising out of the icy water, or even from the snow, the Soldanellas were blossoming and also already seeding, so that we may try, as many have done before us, to raise and grow them in a moraine at home. The wonderful feature of this lovely pass through which no motor or horse-drawn vehicles may go is the concourse of glaciers which by their grandeur appeal to the passer by; but of these there is nothing to be said here. They represent the forces of destruction and many are the signs of their activity. The plants, each in its niche in a natural rock garden—though many are killed in their beds by falling screes of stone, or ground to pieces beneath the advaning ice or torn from their root hold by the sapping activity of mountain streams—triumph over the forces of destruction and relieve the ominous grandeur of the high alps. They beguile the traveller who cares for them, so that a journey which the guide book—that policeman always moving on the tourist—says takes twelve hours, takes him at least three days, and that without counting the many days which presently he will spend in reconstructing his own rock garden in the light of the experience gained whilst digging among the moraines and boulder clefts wherein the high alpines root themselves. *A. N.*

NOTES FROM WISLEY.

IN a recent lecture, Dr. Schneider, the authority on Berberis and other shrubs, showed a coloured slide of a single plant of Primula Littoniana which carried no fewer than sixteen flower spikes. While Wisley cannot boast of such a phenomenon, there are numbers of good plants of this brilliant-flowered Primula now blooming in the Wisley gardens. A slide was also shown of this species growing in association with Trollius yunnanensis, which has Caltha-like flowers and which is in bloom in the herbaceous borders adjoining the pinetum.

In these borders many varieties of Phlox are to be found. A good white one is Snowdon, which is among the earliest to flower. On the other side of these borders are many of the Aster species collected by the late Reginald Farrer and among other Composites Buphthalmum speciosum and Heliopsis zinniaefolia make bold splashes of yellow.

In parts of the rock garden a strong Lily-like perfume may be experienced, the source of which is not easy to discover. It will, however, be found to emanate from a group of Dianthus Sternbergii. For the time of year the rock garden is unusually bright and masses of colour are occasioned by such plants as the yellow Alyssum argenteum which takes the place of the spring-flowering A. saxatile. Helianthemum Tuberaria, with its clear-cut, yellow petals and large leaves; Erigeron Elsie, and many kinds of Campanulas, such as C. Spetchley (from the late Mrs. Berkeley), C. kolenatiana and C. garganica hirsuta.

It is interesting to record the springing up of young plants of Adiantum pedatum in the moraine near which is a large specimen of this graceful Maiden Hair Fern. Not far distant the beautiful and fragrant Primula nutans is flowering for the third year in succession and some plants of the half-hardy Geranium anemonaefolium are in bloom.

Of the rock garden shrubs, Escallonia langleyensis and E. philippiana are flowering well and Carpenteria californica attracts considerable attention.

In the wild garden many spectacular plants are in bloom, such as Iris Kaempferi, Lilium giganteum, L. pardalinum and L. Parryii, and one is apt to overlook the more modest but scarcely less beautiful flowers of some Ericaceous shrubs which are now blooming. These include Vaccinum corymbosum, V. virgatum, Pieris Mariana, the hairy-flowered Gaultheria Shallon, Lyonia ligustrina and the exquisite Zenobia speciosa.

Numbers of South African plants grown for the British Empire Exhibition are coming into flower in one of the greenhouses, including a variety of showy, half-hardy annuals, the majority of which are Composites. Of those with blue flowers Charieis heterophylla (the Cape Aster) is conspicuous; its blooms superficially resemble those of Anemone Hepatica. Heliophila pilosa has blue, Linum-like flowers, but is not so showy, while Aster Bergerianus is just like one of our common Daisies with its petals dyed blue.

Among the Dimorphothecas the silvery white-flowered D. pluvialis is remarkable for the ring of purple just outside the central disc. Another silvery-flowered Composite is seen in a species of Arctotis with grey foliage. Diascia Barberae and the orange Ursinia pulchra are also attractive.

Apart from these annuals there are various bulbous plants such as Gladiolus hirsutus and G. callistus with pink flowers, and the beautiful white-flowered G. blandus. Among the smaller species is Gladiolus alatus the colouring of which is most curious, being orange-brown and greenish-yellow. Startling colours occur in several of the Babianas, such as the vivid magenta B. villosa, and B. rubro-cyanea, which describes itself. Many interesting Albucas and Watsonias are also being grown but are not yet in flower. *J. G. White.*

NOTES FROM GLASNEVIN.

THE showery weather of early summer, while in some respects detrimental to the outdoor garden, has suited trees and shrubs. There has not been such good growth or such ample foliage for at least three years as can now be seen on all woody plants. The later flowering shrubs have bloomed abundantly, in addition to making good growth, more particularly the Escallonias, which are at present in great beauty. The wild species of Escallonia, though on the whole useful and pretty shrubs, are outclassed by the hybrids for garden purposes. The earlies to bloom here is E. exoniensis, a good, vigorous shrub too well known to require description. E. langleyensis, with delightful rosy-pink flowers borne on gracefully arching branches, remains one of the very best of shrubs and is not surpassed by any later hybrid; E. Balfouriana is similar in habit but with rather paler flowers, while in E. Donard Seedling the flowers are white flushed with pink; the variety C. F. Ball, raised at Glasnevin, is rather stiffer in habit than any of the above, and has rather larger leaves and flowers of intense crimson. The Escallonias are particularly valuable for July flowering and are easily grown and propagated.

Clematis Fargesii flowers at the end of June and into July, when the large, white flowers, borne on longish peduncles from the leaf axils, are very beautiful. It belongs to the Montana series which also includes C. Spooneri, an even finer plant, with larger, pure white flowers, which have not appeared so freely as usual this year. Of C. montana, the type of the series, there are two exceptionally fine July to August flowering plants in C. montana Wilsonii and C. m. Wilsonii platysepala, the last named being the finer form, producing flowers of good size and substance; both are white flowered, bearing the flowers along with the leaves.

Caesalpinia japonica, a native of Japan and also of China, is an interesting subject for a sunny wall; the light green, twice pinnate leaves are up to a foot long, clothing the thorny stems; the racemes of clear yellow flowers are as long as the leaves and composed of over twenty flowers. It is a good plant for a sunny, sheltered position

Plagianthus Lyalli glabrata flourishes near the Caesalpinia and is now producing its white flowers in great profusion. This fine plant grows almost too vigorously against a wall, but hitherto we have not had much success with it in the open. I have seen it, however, in Co. Down, growing quite as vigorously away from a wall. The downy leafed form has not grown so vigorously here, and does not flower so freely, but it happens to be in a less favourable position, hence no definite conclusions can be drawn meanwhile.

Amphirhapis Harroviana promises to be a useful, late summer-flowering shrub. The leaves are up to six inches in length, lance-shaped, and green on both surfaces. The flower heads are produced in compound corymbs six inches across, at the end of the current year's shoots. The ray florets are deep lilac in colour, a great improvement in this respect on A. albescens, of which the ray florets are light lilac and the heads smaller; there is also a form of the latter growing here with yellowish-white florets. Microglossa is now the correct generic name.

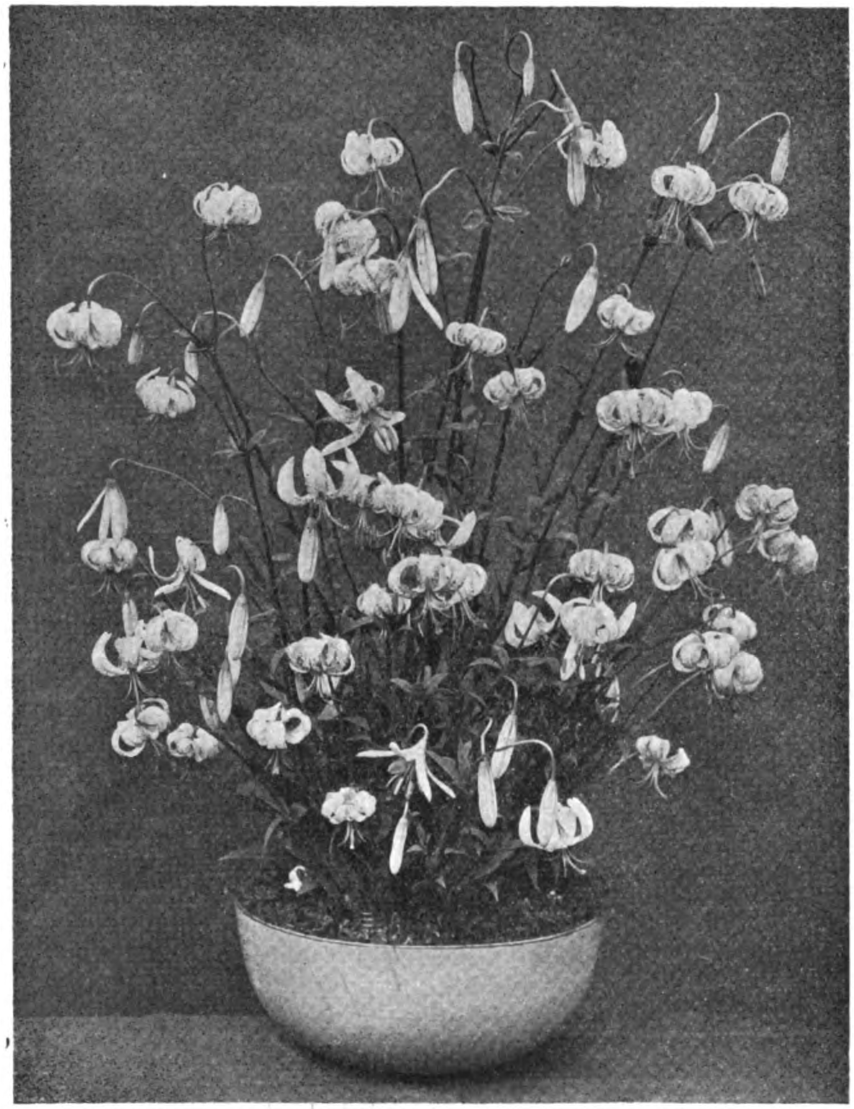


FIG 22.—LILIUM FARRERI.
R.H.S. First Class Certificate, July 8 (see p. 33).

Euphorbia sikkimensis, though perhaps more a botanical than a horticultural plant, is not without interest to plant lovers. The stems reach a height of about three feet, bearing broadly linear leaves up to six inches long, the midrib being rather conspicuously pink on the upper surface. The shoots are terminated by the flowers, which are of course inconspicuous but are subtended by large yellow bracts of considerable ornamental value. This species is grown here in a narrow border adjacent to a cool greenhouse and is probably fairly hardy.

Iris nepalensis belongs to a section which contains only two species. As Mr. Dykes points out in his *Handbook of Garden Irises*, and in *The Genus Iris*, the rootstock is unique in consisting of eight to twelve fleshy roots attached to a bud. The leaves in our specimens (which Mr. Dykes described some years ago as "a strong form") are up to two-and-a-half feet in length, an inch wide in the middle, conspicuously veined, glaucous towards the base becoming green towards the apex, and are sword shaped. The stems are over a foot high bearing several short branches all producing flowers which last for only a day, but others follow in succession for some time. The flowers are of a beautiful deep lavender; the falls have a bright yellow ridge, the standards, which are spreading and not erect as in most Irises, are narrower. In our plants the flowers are rounder and the segments relatively broader than the specimen illustrated in *The Genus Iris*, while the colour is very different, being more lavender blue than lavender pink and with no trace of veining on the falls or standards. Our largest plant is growing at the base of a sunny wall facing south. The soil is deep but dry, and the plant is increasing rapidly in size and vigour although it has never been lifted since it was planted some years ago. Another specimen is growing in front of the Victoria Regia House facing south east, in a border of deep soil about a foot wide bounded on the outside by an aquatic tank. It is doing equally well though planted later. Iris Collettii raised from seeds collected by Mr. Forrest has also flowered this summer and previously, but is inferior as a garden plant. The leaves are greener and rather broader and the stems only about three inches high; the flowers are smaller, lighter in colour and fewer in number. The plants, however, were put out in a sunny border but away from a wall and do not seem quite happy. Perhaps a move to the base of a wall will improve matters. So far as I. nepalensis is concerned I think there could be few more beautiful floral sights than a plant with twenty-five flowers fully open.

Hardy Orchids are worthy of considerably more attention than they commonly receive. Numerous groups about the rock garden and in the bogs have been very beautiful for some weeks. The earliest of the Orchids was O. mascula, which grows freely among Rhododendrons, but more striking have been O. maculata and its varieties; of the latter, O. m. immaculata (O. O'Kellyi ?) with unspotted leaves and pure white flowers is exceptionally beautiful; O. m. rosea (Fig. 23) has pale pink flowers with deeper veining.

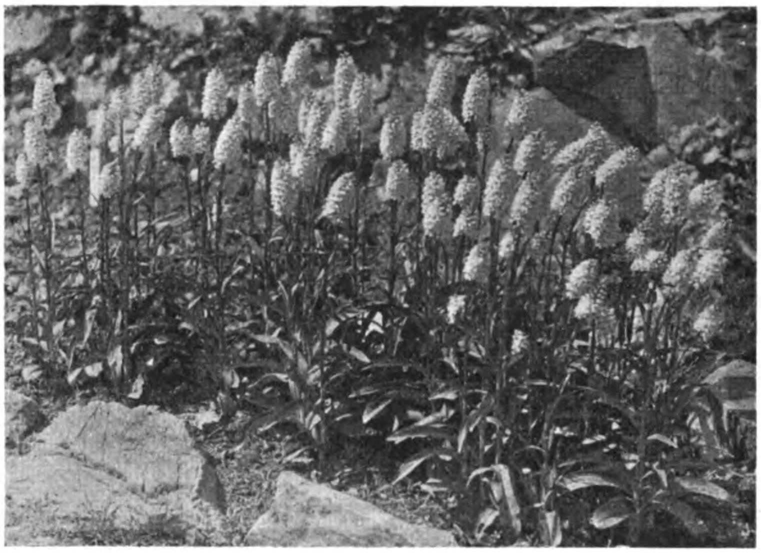


FIG. 23.—ORCHIS MACULATA ROSEA AT GLASNEVIN.

O. latifolia grows spontaneously in the moist ground about the pond, some plants showing great vigour, especially near the bog beds where they evidently delight in richer soil.

A very handsome Orchid, long known as O. latifolia Glasnevin variety, was identified by the late Mr. R. A. Rolfe as O. elata. It is in all respects like an exceptionally vigorous form of O. latifolia of a fine deep purple colour, but I have not made a careful comparison of the tubers.

Orchis foliosa, the Madeira Orchis, also flourishes under boggy conditions and makes a fine group. The leaves are much broader than in any of the preceding and the flowers, of a light purple colour, are produced in handsome spikes. Much remains to be done in the cultivation of hardy Orchids, but they are coming into their own.

Among indoor Orchids the following have been conspicuous:— Miltonia vexillaria in variety, Cypripedium barbatum, C. tonsum, C. Leonard, and C. St. Albans, Cattleya Warscewiczii (gigas), C. gigas × C. Gaskelliana, Laelio-Cattleya Aphrodite elegans, L.-C. aurea × superba, Aerides Houlletiana Sanderae Epidendrum maculatum, Dendrobium Farmeri aureo-flavum, D. Dalhousieanum, D. elongatum, D. Gibsonii; Coelogyne Dayana, Sobralia macrantha, Odontoglossum citrosmum, Platyclinis filiformis, Vanda teres, Promenaea citrina and Bulbophyllum leopardinum, with spotted flowers clustered at the base of the pseudo-bulb. *J. M. Besant.*

HORTICULTURE AT THE BRITISH EMPIRE EXHIBITION.

CARNATIONS.

A very interesting garden designed and laid out by Messrs. Allwood Brothers near the Ceylon Pavilion at Wembley, is planted entirely with Carnations and Dianthus Allwoodii, and, in the Palace of Engineering, Mr. C. Engelmann exhibits cut blooms of all the leading varieties of perpetual-flowering Carnations.

Messrs. Allwood Bros.' garden is roughly five-sided, facing a straw-thatched pavilion or summer-house and has as its main feature a sunk garden enclosed by dwarf stone walls. The garden is approached at one corner through an oaken lich gate and at another corner by a very ornate, antique iron gate, which leads by a flagged stone path to a circular bed of grass, in the centre of which is a fountain and bird bath surrounded by beds of Carnations cut out of the turf. The sunk garden is immediately in front of the summer house and contains a large, central oval bed in which are several panels filled with Carnations. Two borders at the side are filled with perpetual border Carnations and the sunk garden is enclosed by dry stone walls the tops of which are overhung with Dianthus Allwoodii.

A flagged pathway from the lich gate leads in a serpentine manner past a border of Carnations and, on the opposite side is a lawn with beds filled with Dianthus Allwoodii. The scheme also includes rockeries to show the suitability of Dianthus Allwoodii for inclusion in rock gardens. The whole garden is surrounded by a Yew hedge.

The best of the perpetual border Carnations are Sussex Beauty, heliotrope; Sussex Pink, pale blush pink; Sussex Crimson, Sussex Red, Sussex Purple, Avondale, a very pretty shade of salmon-pink; and Sussex Bizarre, pink, striped heliotrope. Amongst the indoor perpetual-flowering varieties which have been utilised for a summer display out-of-doors are Wivelsfield Beauty, a yellow Fancy; Mikado, Destiny, George Allwood and Triumph.

Of the Dianthus Allwoodii varieties, the best are Elizabeth, shrimp-pink; Beatrice, salmon-pink; Alfred, white; Bryan, rose-pink with fringed edges; Peggy, rosy magenta, a very free-flowering variety with smallish blooms; Arthur, red with a maroon centre and with a very sweet scent; Lottie, pink; and Susan, lilac with a maroon centre.

In the pavilion, cut blooms are displayad in fancy receptacles, the chief sorts being Coral Gem, Topsie, Maine Sunshine, Chinz, Wivelsfield Fancy, Eldorado, and Wembley Wonder.

RHODODENDRONS.

Rhododendrons in Nature.

(*Continued from p.* 46).

Species having scattered distribution are all more or less exceptional cases. The rule seems to be that within the area of greatest concentration, there is a limited and definite range for each species and many closely related species, even the sections showing a tendency to segregate themselves in definite climatic areas; towards the outskirts, both altitudinal and latitudinal, a greater range for each species, or less differentiation. On the edges of the Rhododendron preserves are found outliers of familiar sections, not new sections brought into existence to cope with less favourable conditions.

Though there are fewer species of Rhododendron in the dry Marches (western Szechwan, in a nutshell) than in Upper Burma, it may be doubted whether there are fewer Rhododendrons. True, they are not found at such low altitudes—mainly because no part of western Szechwan is below 9,000 feet above sea level. On the other hand, the snow line being 4,000 feet higher in Szechwan than it is in Burma, Rhododendrons are found at correspondingly greater elevations. The forests of R. Traillianum, of the 'Grande' series, and of the 'Campylocarpums' and 'Soulieis' in the Marshes are quite as extensive as those of the 'Haematodes' and 'Falconeri' species in Upper Burma. The 'Lapponicum' sea is every wit as breezy as the Heather mixture of the Burmese Alps.

As regards hardiness, or should I say 'adaptability?' there is not much doubt. Experience shows that those sections which are confined, or almost confined, to the Indo-Malayan regions are on the soft side. Hence there is little hope of anything which answers to the family name of 'Maddeni,' 'Stamineum,' or 'Irroratum.' Species of the 'Saluenense' and 'Campylogynum' sections from high altitudes on the borderland of Indo-Malaya may also be unaccommodating and *difficile*—particularly the former, whose hairy leaves are a danger signal. But I think that is due more to the extreme conditions under which they exist in there own country than to special Indo-Malayan affinity. At any rate, the equally exclusive 'Sanguineums," 'Haematodes,' and 'Neriiflorums' from rather lower altitudes can be broken in to English conditions without much difficulty. Outliers of hardier sections which have found their way to Indo-Malaya and settled down there, are likewise under a cloud. There can be little doubt then that any species (I do not refer to hybrids) with a taint of the Indo-Malayan blood in it will be peevish and need care; which is a pity, because many of them, in colour at any rate, are in the first rank. But this is not to deny that many of them will grow well in the most favoured spots in Britain; merely we would issue a warning as to their temper anywhere and suggest that the east coast, though salubrious, would be too strong meat for them. The best way to overcome this disability, and control the racial poison, is doubtless to cross the Indo-Malayan species with a hardened species from outside, if the section is a widely distributed one; if on the other hand the section itself is confined within Indo-Malayan limits, there is no remedy.

The species from Szechwan and Hupeh beyond the Yangtze (which river broadly seems to divide the Rhododendrons into two camps) are on the other hand much hardier, even though they frequently come from much lower elevations, especially in Hupeh. It must be remembered that Indo-Malaya, including a big slice of Western Yunnan, at least as far east as the Mekong Gorge, falls under the influence of the monsoon—a climatic condition which in this country we cannot approach, and indeed rather reverse. The climate of north Central China approximates to our own. In the hilly country of the China coast Fortune found a number of hardy species of Azalea, which have been the parents of innumerable garden hybrids and varieties. He wrote: "All around, wild flowers grew in great profusion. The yellow Azalea chinensis seemed to paint the hillsides, so large were its flowers and vivid the colours." Again: "These northern Azaleas are exposed to severe colds during the winter. As I have already observed, the thermometer often sinks to within a few degrees of zero and the weather is not unlike that which we have in England."[*] The Tibetan traveller will not be greatly impressed by cold which is within a few degrees of zero; but the fact remains that the East China Rhododendrons and Azaleas are often hardier than the West China ones. *F. Kingdon Ward.*

(*To be continued*).

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

NAEGELIA.

There are many garden varieties of Naegelia, and although they are perennials and are usually increased from their scaly rhizomes they may, for our present purpose, be regarded as annuals as they may be raised from seeds and flowered the same year. Of course the rhizomes may be kept for use in the following year if so desired.

The seeds should be sown in a house having a temperature of 60° during January and February, and when fit to handle the young seedlings should be pricked off into pots or pans of light rich soil and grown on until they are large enough to be transferred singly to small sixty-sized pots. As they increase in size more loam should be used in the potting compost, and during their final stages of growth they do quite well in any good potting compost. During their first season from seed sowing good plants may be grown and flowered in 48-sized pots and these prove very useful for furnishing the greenhouse during late summer and early autumn. Although during their earlier stages they appreciate a temperature of about 60°, with plenty of atmospheric moisture, as they approach the flowering stage they should be given cooler conditions to fit them for the greenhouse.

GILIA.

This genus includes some very pretty annuals which are useful for the cool greenhouse, and as they mostly grow about one foot high, or less, they are well suited for the small, unheated greenhouse.

They are of slender growth, and in common with most plants of this habit they must be grown quite cool to be a success, with free exposure to light and air; if coddled and shaded they grow weak and weedy, and are more or less useless. Seeds should be sown in a cool house about the beginning of February, and when large enough to handle the seedlings may be pricked off directly into their flowering pots, 48-sized pots generally being large enough for them, although G. capitata, with blue flowers, will require six-inch pots as this species grows about two feet high. It is usual to grow three or four plants in a pot.

This genus now includes the Leptosiphons. Gilia androsacea and G. densiflora are dwarf annuals now obtainable in many beautiful colours; they are well suited for growing in pans, their dwarf habit making them specially useful for small and low houses. Other good species are G. achilleaefolia, G. dianthoides, G. liniflora, and G. tricolor.

G. coronopifolia, the most handsome of them all, grows three or four feet high and has fine feathery foliage and beautiful red flowers. It is really biennial, but for our purpose we may regard it as an annual. If seeds are sown during January the plants will flower the same year, but for greenhouse use it is best to sow seeds during June or July in a cool greenhouse or cold frame. When large enough transfer the seedlings singly to thumb pots, potting them on as they require it, so that by autumn they should be in large 60 or 48-sized pots, in which they may be wintered. Being a native of California, damp conditions during dull weather prove very harmful to G. coronopifolia, therefore considerable care is required to bring the plants safely through the winter. They should be given a position on a shelf in a dry, airy house, and during the winter no more water should be given than will be sufficient to prevent them from suffering; when water is applied it should not be poured into the large rosette of leaves. Having brought the plants safely through the winter they should be placed in six-inch pots about the beginning of February; in these pots they will flower. By no means easy to grow successfully, this plant is so beautiful that it is worth some extra care and trouble.

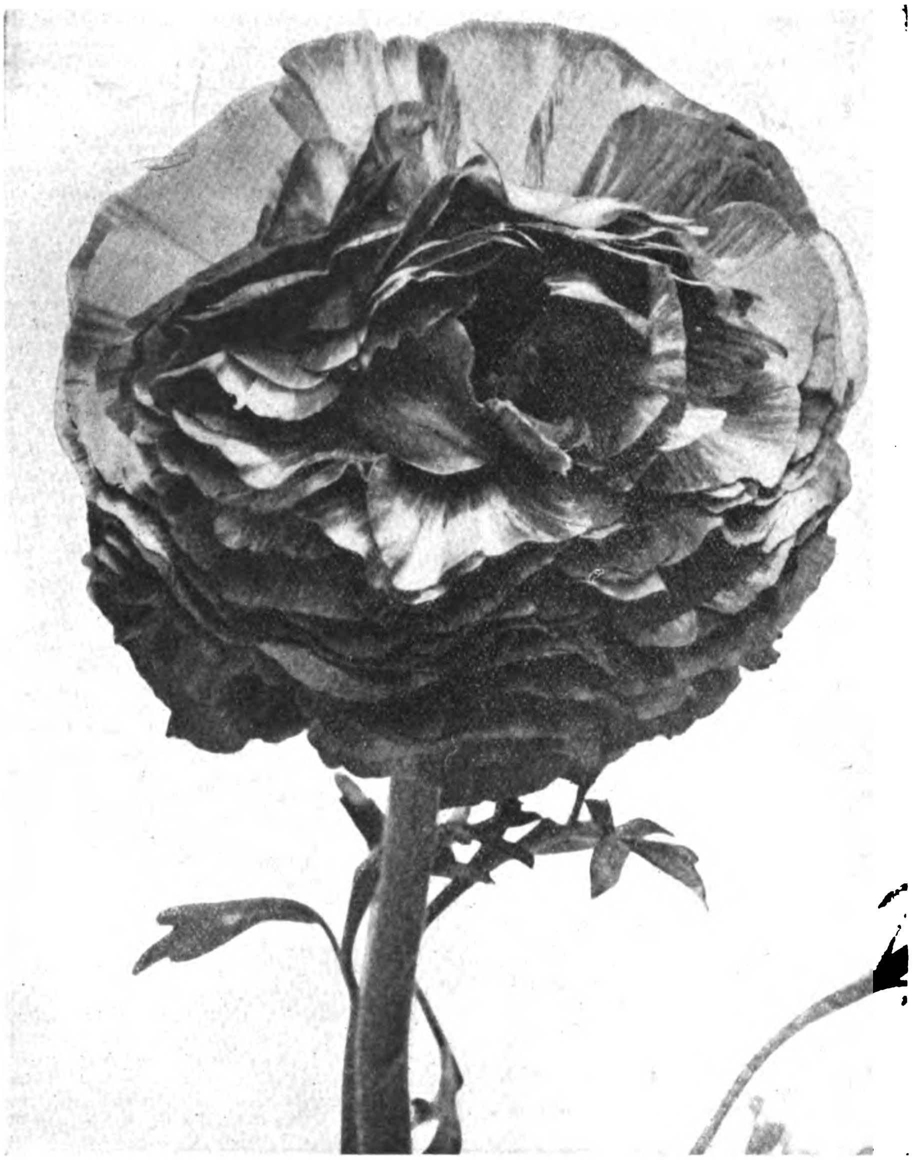


FIG. 24.—GIANT FLORENTINE RANUNCULUS

NATURAL SIZE. (See p. 59).

GOMPHRENA GLOBOSA — GLOBE AMARANTH.

This pretty plant, of which there are many varieties, has "everlasting" flowers and is very useful for greenhouse decoration during the summer. Gomphrenas succeed under the some treatment as Celosias; sow the seeds in a temperature of 50° to 60° from January to April, and grow the young plants in an intermediate temperature. As they increase in size they require only an ordinary greenhouse temperature. They succeed in any good potting compost, and being naturally of a neat branching habit they do not require any stopping. They generally grow from one foot to eighteen inches in height, and good examples may be produced in 48-sized pots. If it is desired to save the flowers for winter use they should be cut before they are too fully open. *J. Coutts.*

---

[*] *A Journey to the Tea Countries of China.* By Robert Fortune.

IMPERIAL BOTANICAL CONFERENCE.

The first Imperial Botanical Conference was held in London (with headquarters at the Imperial College) from Monday, July 7, to July 16 inclusive. In his opening address the President, Sir David Prain, spoke of the origin of the conference. At the International Botanical Congress held at Vienna in 1905 there was a general feeling that the next Congress should be held in London, but as the representatives from this country were not armed with the necessary authority to give the invitation, that of Brussels was accepted. At the Brussels Congress (1910) everything was in order and the invitation to hold the next International Congress at London in 1915 was welcomed. A British executive committee was formed and arrangements were in an active state of preparation when a change in international relationships made such congresses impossible. The executive committee, however, remained in being and after the war continued to act. As a result of much discussion the idea of an Imperial Botanical Conference was conceived. Independently a small committee of younger botanists had been appointed by Section K of the British Association, and decided to push forward the holding of a meeting of overseas botanists on the occasion of the British Empire Exhibition. The two committees joined forces and added to their numbers. Sir David Prain was appointed chairman, Dr. A. B. Rendle, treasurer, and Mr. F. T. Brooks, secretary.

After the address of welcome, the rest of the first morning was spent in examining a number of interesting botanical exhibits.

Owing to the large amount of business to be got through, two sessions were held simultaneously with different eminent botanists in the chair on different occasions. On Monday afternoon there was a symposium on "The Physiology of Crop Yield: a Survey of Modern Methods of Attack." Professor F. F. Blackman gave a general introduction, which, being printed in extenso, was not read. Crop yield has been an age-long pursuit by mankind; with the beginning of the scientific age came fertilizers, glass houses, etc. The modern problem is to produce the greatest yield of crop per unit area. It is an applied problem, its dominating limitations being that it must be done at the least possible expense, and this prevents the exploitation of wholly artificial conditions of plant development, and rivets attention on the use of semi-natural conditions of growth. This limitation of research to such variable conditions introduces great complexity and makes very difficult the task of establishing fundamental truths of wide application, but on the other hand gives great importance to small margins of difference.

The general problem was divided into five sections. The first dealt with the experimental study of the factors and conditions affecting growth. Crop yield is a special case of plant growth, and underlying each special crop problem is the general physiological one of the augmentation of growth, and its control by such factors as nutriment, aeration, light and dark, temperature, carbondi-oxide, contact of the air, and expense, together with other factors that may yet be brought into account, such as traces of special chemical elements, etc. It is not possible to investigate the single factors in the field, and fundamental studies have been made in the laboratory where control of factors is possible. In the field these uncontrolled factors are generally grouped as weather and left to natural variation. With intensive cultivation in glass houses, temperature and humidity are brought under human control and we get nearer to laboratory conditions. Light can now be added to the controllable factors; using modern powerful electric illuminants it is possible to supply artificial light adequate for plant growth, either continuously or discontinuously, and the study of the interaction of these weather factors can be pushed further in the laboratory. Papers by Dr. F. G. Gregory and Professor V. H. Blackman were read in this connection. The former was entitled "Experiments on Plant Growth with Controlled Light and Temperature." The investigation arose out of the problem of the earliest profitable sowing time for Cucumbers in glasshouse cultivation. Here it was clear that temperature (partially controlled) and light (uncontrolled) were the main factors determining yield. A laboratory study of growth with both factors controlled was therefore undertaken. The problem was found to be complex, due not only to the inter-relationship of the two factors in such a process as assimilation but also because of the marked adjustment of the plant as a whole to variations of external conditions. This adjustment is seen in the alteration of leaf shape, maximum leaf size, leaf-stem ratio, and so on, with different combinations of the two factors.

Professor Blackman's paper on "The Electrical Conditions of Plant Growth," gave an account of our somewhat uncertain knowledge of the mixed results of electro-culture in the field and the attempt to elucidate them by laboratory studies in controlled conditions. The second section of the subject—"The Ontogeny of the Crop and the Duration of the Development Sequence"—emphasised the complexity of the whole situation which is due to the organisation of plants. Crop-yield covers a wide range of special cases. The desired crop may be the fleshy parts of the whole plant or its wood, fibre, or bark. On the other hand, it may be some special morphological part, as the flower buds of the Caper, the petals of the Rose, the stamens of the Crocus, the fruits of the Apple, the seeds of the Pear, the seed-hairs of Cotton, not to mention various tubers and roots. The desired part comes at a late stage of a long development sequence. All other parts except this one morphological unit may be valueless, and cultivation has to work upon the morphological plasticity that most plants exhibit and endeavour to produce the maximum of the crop parts and the minimum of the antecedent or alternative parts. For this aspect of crop-yield we need detailed studies of the normal sequence of development of each crop plant combined with an exploration of its plasticity under the influence of natural and artificial variations of environment, including operations such as pruning.

A further set of problems arises out of the effect on yield due to the varying duration of the development sequence in the individual plants of a crop. In most plants this sequence is not a closed one, but development of crop may be prolonged by suitable external conditions and the yield thus increased. Under completely controlled laboratory conditions the development sequence of an annual plant could be carried through at the ideal rate found to give the maximum duration of the crop-yielding phase of the plant's life cycle. In the field it is generally the weather cycle which initiates and closes the conditions for the development sequence. With unknown weather before him the grower has to decide year by year when he will start the development sequence, *i.e.*, he has to give the sowing date for each crop. Ages of past experience have accumulated much empirial wisdom on this matter, and it is clear that for the purposes of crop yield it is possible to improve on the natural determination of the sowing date which coincides with the end of the previous growth cycle. This section was illustrated by Dr. W. L. Balls's paper on "Developmental Analysis of Crop Yield."

(*To be continued.*)

VEGETABLE GARDEN.

THE PARSLEY.

(Carum Petroselinum).

The Parsley of our gardens is reputed to be a native of Sardinia, and to have reached our shores in 1548. Prior to its introduction into England, where, according to Dodonaeus, it was named Persele, it had been cultivated and its virtues appreciated for more than two thousand years, notably by Pliny who, in Cap. II, Book 20, extols its merits and remarks upon the extent of its culture. Other writers inform us that its leaves were much used in cookery, communicating an aromatic and agreeable flavour to soups and other dishes, and that its root yielded an aperient medicine.

Among the Greeks, Parsley was made use of to decorate the tombs of the deceased. It was the herb of which in the Isthmian and Nemean games the crowns of the victors were composed. Among the Romans Parsley was considered a necessary ingredient in their festive garlands because it retains its verdure for a long time, affords a grateful smell, and was supposed to absorb the inebriating fumes of wine, and by that means, prevent intoxication.

The history of the Parsley is an interesting, albeit a chequered one. The favourable side is outlined above, the reverse appeared some years ago in the pages of a seedsman's catalogue in the Midland counties, where, in an effort to account for the long time Parsley seeds takes to germinate, it was gravely stated that it (the seed) had to take seven journeys to the devil and back before it could begin to grow! In the writer's early days many people in the south-west of England held Parsley seed to be that of an accursed plant, and would not tempt Providence by sowing it in their gardens. Possibly the fact that the plain Parsley may easily be confounded with Fool's Parsley, a virulently poisonous plant, may be the reason why the genuine article has such a bad name. If the statements made at the time when large quantities of Parsley seed were being shipped from southern Europe to America were true, viz., that they were intended for the manufacture of an adulterated form of absinthe, there can be no doubt of it being in that case "an accursed thing."

The modern view of the Parsley plant is that, in addition to its culinary uses, it provides a valuable diuretic for human use and is specific in the cure of liver rot in sheep; it is apparently a very pleasant medicine, judging by the manner in which it is devoured by sheep and other herbivorous animals.

Its uses for human food chiefly consist in flavouring and garnishing, for which the leaves are used raw, boiled or fried, the latter being, in the opinion of the writer, by far the best method, always provided that the cooking is done by a skilful French chef.

Very little change has been made in the plant during the past three hundred years. Dodonaeus, 1618, illustrated a plant of Van Gemeyne Peterselie (*i.e.*, cultivated Parsley), with leaves rather finely cut, very slightly curled, and with a fusiform root; the exact counterpart of the ordinary Curled Parsley of the present day. That the curled variety was known at that time is also confirmed by the fact that Mathias Lobel mentions it under the name of Petroselinum crispum or Apium hortense crispum, but into the problem of the naming of this perplexing plant it is not wise for me to enter; I have placed it under its most modern designation and that must suffice.

The principal varieties are the Plain or Sheep's Parsley, with quite smooth leaves; the Italian Giant Plain or Single, which resembles in form and foliage an enormous

Celery; Giant Curled, a rather strong growing, bright green variety, not too closely curled but more on the lines of the old Myatt's Garnishing and specially good with stewed eels: Champion Moss Curled, a dark green, very close curled Parsley of medium height, the best all-round variety; Dwarf Perfection, a very bright green, dwarf, strong growing sort, not too closely curled, but an excellent garnishing variety; Fern-leaved, a quite distinct and beautiful variety, of which the leaves are not curled but very finely cut, giving the plant a very feathery appearance. A very difficult variety to keep true.

All the foregoing are cultivated for their leaves only, but there is another class which is cultivated for the roots only and which is very highly esteemed in Germany, but is not quite so popular in England or in France. In these days this section is known as the Hamburgh or Turnip-rooted, but in Dodonaeus's Herbal they are named the Groote Eppe or Alexandrian. In England and France they were called Parsley or Persil Alexandre. It does not seem likely that they were of German origin, and we have no evidence that they were Egyptian. There are three varieties of this class, the Early Short Plain-leaved, which is shaped like a Parsnip; the Long Late, the most useful variety; and the Curled-leaved Long-rooted, in which the curl of the leaf differentiates it from the other two. These are sometimes termed Dutch Parsleys; only the root is eaten, and Justice, 1754, writes of them, "If they be boiled in broth they are Catholicons against Decays of every kind." *S. B. Dicks.*

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Snowdrops.—It is a matter of some astonishment to me to see that an anonymous correspondent of yours is at some pains to emphasize the statement that, from his observations, the Snowdrop only increases by offsets, never by seed. Obviously, there is something lacking either in his powers of observation, or in conditions of soil or otherwise in the district in which he resides. I can only say that here a number of Galanthus species form seeds and reproduce themselves from seeds quite freely, and it has been one of my pastimes to save and sow the seeds, for many years past. This month, for instance, I have sown seeds from G. byzantinus, G. cilicicus, G. Elwesii, and G. Ikariae, &c., and we have been lifting bulbs now arrived at their flowering stage which have all resulted from seeds of these and other kinds sown several years ago. And I have, and have had, several acquaintances in different parts of the country who amuse themselves in the same way. I can only conclude by condoling with *Formakin* in the singular ill fortune which has been his experience. *F. Herbert Chapman, Rye.*

Strawberry The Duke.—I was surprised to read the remarks of Mr. Wadds (see p. 31), on Strawberry The Duke. So far I have found this variety to be all that could be desired for early use, in fact its robust constitution has enabled it to withstand the attacks of many pests to which Strawberries are subject. But surely the attack of red spider mentioned by Mr. Wadds indicates some mistake in general treatment. It would be interesting to hear what other growers would have to say concerning this excellent new Strawberry.—*A. W. Pullin, Turvey House Gardens, Turvey, Bedford.*

SOCIETIES.

ROYAL HORTICULTURAL.

July 22.—The Hall at Vincent Square' Westminster, was pleasantly filled on the occasion of the fortnightly meeting of the Royal Horticultural Society, and there was a good attendance of visitors. Although the National Carnation and Picotee Society held its annual show in conjunction with the R.H.S. Meeting, Roses were more numerous than Carnations amongst the floral exhibits, but there was a goodly number of collections of Carnations and all of them were of considerable merit.

The Collection of Zinnias which was arranged with great skill by Messrs. Dobbie and Co., well deserved the high award of a Gold Medal, for it was of uncommon merit. General border flowers were shown in seasonable quantity, but Orchids were few in number. Chief amongst the fruit exhibits was a large collection of Gooseberries from the Society's Garden at Wisley. There were also collections of exceptionally good Black Currants and Cherries.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Messrs. Gurney Wilson (Secretary), James O'Brien, E. R. Ashton, T. Armstrong, John C. Cowan, Charles H. Curtis, Henry H. Smith, H. T. Pitt, Fred. K. Sander, S. W. Flory, Fred. J. Hanbury, George W. Butterworth, and T. Roland, the last two visitors from the U.S.A.

Award of Merit.

Miltonia Constance var. Regina (*M. vexillaria Lyoth* × *M. Isabel Sander*), from H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood). A very pretty variety with flowers of a rich rosy-mauve shade with a ruby-red mask on a white ground at the base of the lip. The original form shown previously by Messrs. Charlesworth had white flowers with a maroon mask on the lip.

Cultural Commendations.

To H. T. Pitt, Esq. (gr. Mr. Thurgood), for a grand specimen of Miltonia Phalaenopsis with nineteen pretty, white flowers with radiating blotches of rose-purple on the lip. The plant has been many years in the Rosslyn collection, and has been brought to its present state of perfection from an imported piece of five bulbs. To E. R. Ashton, Esq., Broadlands, Tunbridge Wells, for a superb specimen of the pretty Zygopetalum (Promenaea) xanthinum grown in a pan and measuring about eighteen inches across. The densely-tufted dwarf plant bore about seventy pretty, chrome-yellow flowers, and formed a most attractive object.

Groups.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), was awarded a Silver Banksian Medal for a very interesting group, in which Miltonias were well displayed. Among the varieties of M. vexillaria specially fine were M. v. Queen Alexandra with a fine show of large, blush-white flowers; and M. v. Rev. W. Wilks, the largest and best of the blush-pink forms, the labellums being four inches across.

As usual in his groups Mr. Pitt included a very interesting selection, the most noteworthy being Odontoglossum aspidorrhinum with many elegant sprays of flowers, three or tour arising from the same pseudobulb; Angraecum Scottianum with terete leaves and elegant white flowers; Zygopetalum Crawshayanum, the prettiest of the hybrids of the Promenaea section; Epidendrum prismatocarpum and other Epidendrums; varieties of Cypripedium Godefroyae, the now scarce C. Chamberlainianum, and a pretty selection of Odontiodas with well-flowered plants of the primary ancestor, Cochlioda Noezliana.

Messrs. Stuart, Low and Co., Bush Hill Park, Enfield, were awarded a Silver Banksian Medal for an important and well-arranged group, in the centre of which was a magnificent plant of Laelio-Cattleya Aphrodite with two spikes of four flowers each. Other Laelio-Cattleyas were well shown, also Brasso-Laelio-Cattleya Queen of the Belgians, with large, blush-white flowers. The best of a selection of fine forms of Cattleya Warscewiczii had six flowers on a spike and there were fine specimens of the famous white-petalled variety Frau M. Beyrodt. Rare species in Messrs. Low's group included Epidendrum Brassavolae, Odontoglossum Schleiperianum citrinum, varieties of Cypripedium Godefroyae, the rare C. Parishii, the fine old Laelia crispa and L. xanthina, the last not very showy, but used with good effect by hybridists.

Messrs. Flory and Black, Langley, Slough, showed a fine specimen of Cattleya Warscewiczii, Britain's Queen, with a spike of two finely-formed blush white flowers, each over seven inches across; the front of the lip is Peach blossom colour, and the disc Cowslip yellow.

Floral Committee.

Section A.—*Present:* Messrs. H. B. May (in the Chair), J. F. McLeod, Donald Allen, H. J. Jones, Andrew Ireland, Montague C. Allwood, W. B. Gingell, W. Stephens, D. B. Crane, W. P. Thomson, Chas. E. Pearson, W. Howe, J. B. Riding and W. H. Page.

Section B.—*Present:* Mr. Gerald Loder (in the Chair), Sir W. Lawrence and Messrs. G. Reuthe, G. Harrow, W. J. Bean, T. Hay, G. Yeld, C. Williams, F. G. Preston, R. C. Notcutt, Amos Perry, W. B. Cranfield, Reginald Cory, E. H. Wilding, H. V. Warrender, W. G. Baker and E. A. Bowles.

Awards of Merit.

Lagerstroemeria indica.—A fine old plant formerly grown to a considerable extent under glass. It was introduced from China in 1816 and will attain a height of about 10 feet if planted in a warm house. In the south of France it grows well out of doors. The crêpe-like, claw-petalled flowers are bright pink in colour and freely produced in terminal heads on shoots from about 1 foot to 2 feet in length. A large bush in full bloom presents a very fine picture. Shown by the Director, Botanic Gardens, Cambridge.

Plagianthus Lyallii var. glabrata.—Plagianthus (Gaya) Lyallii, one of the most beautiful of New Zealand plants is, unfortunately, not quite hardy in all parts of the British Isles. In some districts where it is cut to the ground in severe weather, it grows again from the base and soon becomes effective. As stated by Mr. W. J. Bean in *Trees and Shrubs Hardy in the British Isles*, "the species is represented in gardens by two forms, one of stiffer, sturdier habit and more downy in foliage than the other; also, I think, hardier; this is regarded as the type." The specimens shown on this occasion had rather leathery leaves, whitish on the under surface, and the growth appeared to be more rigid than usual. The flowers, as in the type, are white, papery and on drooping pedicels, but freely produced in clusters. Shown by Messrs. Robert Veitch and Son, Exeter.

Zinnia, Dobbies' Giant Dahlia-flowered.—In this fine strain of an annual which once enjoyed great popularity for summer bedding, the flowers are of unusually large size and excellent shape. The colours are varied, ranging from pale pinkish buff, through rose, yellow and scarlet to rich crimson. Some of the blooms were so much as five inches across and three inches deep. A very handsome strain. Shown by Messrs. Dobbie and Co.

Hemerocallis hybrida Lady Hesketh.—A vigorous, free-flowering hybrid with branching flower stems which may carry so many as three dozen blooms. The individual flowers measure about four inches across and they are wholly of clear citron-yellow colour. Shown by Mr. Amos Perry, Enfield.

Carnation Sir Charles Seeley.—A border variety of great beauty; the colour is rich deep glowing scarlet; the blooms are of medium size, shapely and carried on long, stiff stems. Judging from a photograph shown with the flowers this is a very free-flowering variety. Shown by Mr. E. C. Goble, Ryde, Isle of Wight.

Groups.

Although Carnations were the special floral feature of the show Roses were in the ascendant and, considering the date they were of considerable merit. Messrs. D. Prior and Sons included several novelties in a floriferous collection. Little Juliet is a beautiful garden Rose, it is a seedling from F. J. Looymans and an unnamed sort. It is evidently very free and the combination of Apricot and Peach tones on a yellow ground is very fascinating. Elsie Poulsen, a seedling from Orleans Rose is a quaintly beautiful dwarf Polyantha. It bears plenty of semi-double, clear pink flowers of good size and prettily waved outline. Elvira Aramayo is a showy Hybrid Tea Rose of velvety Indian-red colouring, and Miss C. E. van Rossem is a bright velvety crimson Rose.

Richly coloured blooms of Souvenir de Georges Pernet where included in an exhibit by Messrs. F. Cant and Co. who also showed Isobel, Golden Emblem, Emma Wright and Sunstar.

The chief features of an excellent exhibit arranged by Messrs. Chaplin Bros. were the lovely arches of such Roses as Los Angeles, Mermaid, Emma Wright and the richly fragrant Walter C. Clark; they also showed Lady Inchiquin, Agnes Groves, and Innocence, a large, single white sort with buff coloured stamens.

Along the wall Messrs. B. R. Cant and Sons had masses of the climbing Roses Lady Godiva, and Excelsa which made a fitting background to the dwarfer varieties. These latter included Lady Dixon Hartland, a splendid salmon pink Rose of rich fragrance, H. V. Machin and Lady Roundway,

Chief amongst the many Roses staged by Mr. Walter Eastlea were Los Angeles, Emma Wright, Mrs. F. Doler, Souvenir de Georges Pernet and Perdita, a new H.T. of large size and resembling a pale La France but not quite so fragrant. Massed vases of K. of K., Isobel, Pax, The General and The Adjutant were well shown by the Rev. J. H. Pemberton.

Messrs. Daniels Bros. associated Roses with Sweet Peas. Of the former they had Mrs. Henry Morse, Earl Haig and Madame Butterfly, while amongst the Sweet Peas were excellent vases of The Sultan and Austin Frederick Improved.

A long stretch of tabling was well filled by Messrs. Kelway and Son with their excellent Gladioli. Besides many very decorative Primulinus hybrids they had such large flowered sorts as Queen Maud, Velocity, King of Blues, Erard Compton and Lady Muriel Compton.

The first herbaceous Phloxes of the season were displayed in quantity by Mr. H. J. Jones and Messrs. Waterer, Son and Crisp, and these made a very attractive display. The former included such good pink sorts as Jules Sander, E. Campbell and Madame van Hoboken, while the latter had Baron von Seden, La Madhi, Thor and many other sorts.

General border flowers were shown in generous quantities. The Chalk Hill Nursery Co. included excellent varieties of Coreopsis grandiflora Perry's variety, Astilbes and a quantity of beautiful semi-double Shirley Poppies which held their petals uncommonly well.

In the middle of a collection from Messrs. B. Ladhams, Ltd. towered several flower spikes of the New Zealand Flax (Phormium tenax). They also had a large quantity of Lavatera Olbia rosea and Coreopsis. Messrs. R. Tucker and Son showed Lilium regale and L. superbun with other border flowers.

Heleniums were prominent in an exhibit by Mr. Thos. Carlile. Messrs. Isaac House and Sons showed their grand Scabious, and Mr. G. Reuthe had his customary exhibit of hardy plants.

In a large group on the floor Messrs. M. Prichard displayed a great variety of well-grown Astilbes, Tritomas, Aconitums, Hemerocallis, Liliums and other seasonable plants. Hemerocallis, in considerable variety were also prominent in a collection arranged by Mr. Amos Perry who also showed Clematis integrifolia alba, Lilium chalcedonicum and other Lilies, with Gladiolus and Lady Ferns. The dark-blue purple Prunella grandiflora was on view in a collection of border flowers arranged by Mr. F. G. Wood. Mr. H. Hemsley included Sidalceas and Messrs. W. Wells and Co. had a large vase of Alstroemerias in their exhibits. Messrs Reamsbottom and Co. had a small collection of St. Brigid Anemones.

At the end of the Hall the Hon. Vicary Gibbs staged a large collection of clean and well grown "Scented Geraniums." A great many sorts were represented. Those with variegated foliage included Pelargonium crispum varigatum and P. Prince of Orange. Miss Davidson, Endsleigh, and Zonale minimum have distinct markings on their leaves, while P. filicifolium odoratum, as its name suggests, is fragrant and of Fern-like appearance.

In the centre of the hall Messrs. J. Carter and Co. had a fine group of Trachelium coeruleum with an occasional plant of richly coloured Coleus. Messrs. Robert Veitch and Son staged vases of Notospartium Carmichaeliae, Lonicera Hildebrandiana, Mutisia decurrens and Plagianthus Lyalli; all the sprays were exceptionally well flowered.

Just inside the entrance Messrs. Dobbie and Co. set up the finest collection of Zinnias the show-attending public has ever seen. These were growing in relatively small pots, and while the blooms were unusually large, they were refined and embraced a great range of lovely colours.

Carnations were a good second to Roses in importance. Mr. John R. Crowhurst, a fresh exhibitor at the R.H.S. meetings, filled a corner of the hall with an excellent group of Border Carnations, grown entirely in the open ground. The outstanding varieties of his large collection were Grenadier, Skirmisher, Salmonea, and Crimson Clove.

Messrs. Allwood Bros. also had an exceedingly good collection of Border Carnations. Their chief sorts were Lieut. Shackleton, Mona, Edenside, Mrs. G. Marshall, Lord Steyne and Sweet Anne Page. Messrs. Allwood Bros. also showed a large collection of perpetual-flowering varieties, and their Dianthus Allwoodii.

Such valuable Border Carnations as Bookham White, Innocence, Mary Murray, Jessie Murray and Sheila Gibson were staged by Messrs. Lowe and Gibson. Mr. C. Engelmann set up his customary large collection of first-rate greenhouse Carnations.

A very interesting collection of garden Pinks was arranged by Mr. C. H. Herbert. Amongst his many good sorts were Mrs. Giffard Woolley, a large pale salmon flower of considerable sweetness; Fire King, a scarlet self of free flowering habit; Bridesmaid, a lovely shell pink; and Gertrude, a rich rosy mauve.

In the Orchid annexe Messrs. Groom and Son had a very attractive group of their rich rose-coloured Carnation, Mrs. G. R. Groom, which is deliciously fragrant.

Medal Awards.

Gold.—To Messrs. Dobbie and Co.

Silver-Gilt Banksian.—To Messrs. Allwood Brothers; Messrs. Chaplin Brothers; Hon. Vicary Gibbs; Mr. H. J. Jones and Messrs. J. Kelway and Son.

Silver Banksian.—To Mr. J. R. Crowhurst; Messrs. B. R. Cant and Sons; Messrs. J. Carter and Co.; Messrs. Daniels Bros.; Messrs. Easlea and Sons; Mr. C. Herbert; Messrs. B. Ladhams and Son; Rev. J. H. Pemberton; Mr. Amos Perry; Messrs. M. Prichard and Sons and Messrs. Waterer, Sons and Crisp.

Bronze Banksian.—To Mr. T. Carlile; Messrs. F. Cant and Co.; Chalk Hill Nurseries; Mr. C. Engelmann; Mr. Hemsley; Messrs. D. Prior and Sons; Mr. W. Wells, Junr.; Messrs. Lowe and Gibson; Mr. G. Reuthe; and Messrs. L. R. Russell.

Fruit and Vegetable Committee.

Present: Messrs. C. G. A. Nix (Chairman), H. S. Rivers, G. F. Tinley, S. B. Dicks, J. Wilson, G. Reynolds, P. C. M. Veitch, E. Beckett, T. Pateman, E. Neal, W. Bates, H. Markham, W. Crump, F. S. Treseder, E. A. Laxton, E. A. Bunyard, W. H. Divers and A. N. Rawes.

In view of the Medals offered by Messrs. George Bunyard and Co. for Gooseberries, the Director of the Wisley Gardens staged sixty-eight varieties from the Wisley collection, and there was satisfactory competition for the medals. The award of a Silver Bunyard medal was made to Mr. C. G. A. Nix (gr. Mr. E. Neal) for six dishes of Gooseberries including Whinham's Industry, Trumpeter. Golden Gem, Leveller, Whitesmith and Langley Beauty. A Silver Bunyard medal was also awarded to Mr. H. Kramb, 21, Melrose Road, Southfields, who showed five dishes, but his varieties were not named. The largest exhibit, comprising some thirty varieties, was shown by Sir Charles Nall Cain (gr. Mr. T. Pateman), but the fruits were not so fine in quality as those in the two smaller collections and a Bronze Bunyard medal was awarded in this case.

Of the Wisley collection the very finest in flavour was Langley Gage, and others of fine quality were Lancer, Whinham's Industry, Lancashire Lad, Telegraph, Keepsake, Leveller. Champagne White and Sulphur. Messrs. Laxton Brothers also showed Gooseberries as well as Red and Black Currants of varieties of their own raising. They had their splendid Red Currant Laxton's Perfection, and a new Black Currant named Blacksmith. The Gooseberries included Bedford Red, Green Gem and Amber, the names denoting the type.

Messrs. Bunyard and Co., Ltd., also showed soft fruits including Red and Black Currants. Gooseberries and some remarkably fine Cherries of such sorts as Bigarreau Napoleon, Flemish Red, Triaux, and Geant de Hedelfinger.

Messrs. Chivers, Histon, showed remarkably fine plants and cut branches of Black Currant Edina, bearing heavy crops of large bunches of big berries. They also showed a yellow seedling Raspberry.

Of the subjects submitted for award, Messrs. Sale and Son, Woking, showed a late seedling Cherry, much resembling Emperor Francis. The Hon. E. H. Wyndham, Bicester (gr. Mr. W. Hand), showed Melon Althorpe Park, which received an Award of Merit at the Holland Park Show in 1921. It is a variety of great excellence with yellow flesh and handsome, reticulated skin. The Award of Merit was confirmed and the variety recommended for trial at Wisley with a view to testing its merits for a higher award.

Messrs. Lynn Bros., Emneth, Wisbech, showed a seedling Raspbery named Superb, raised from Perfection crossed with Superlative. It has a large, bright fruit that retains its colour well and is said to be in demand for jam making. It was recommended for trial at Wisley.

KENT COUNTY SHOW.

The second Kent County Show, held at Ashford on the 11th inst., was, from a floral point of view, much smaller than the one held at Gravesend last year. Many visitors were present at the show. The West Kent branch of the National Farmers' Union arranged a Cherry and soft fruit competition and never have we seen such a large number of exhibitors of these fruits. Of the Cherries, the varieties Napoleon, Kent Bigarreau, Black Tartarian, Waterloo, May Duke, Early Rivers, Black Heart, Knight's Early Black and Bedford Prolific predominated; Gooseberries, Red Currants, Black Currants and Raspberries were equally numerous and well shown. The leading prize winners were, for one four-pound-basket of any black variety of Cherry, first, Messrs. H. and A. Hales; no fewer than forty-four baskets were staged in this class; one four-pound basket of any white variety, first, Mr. L. H. Finn; forty-two baskets were staged in this class; three four-pound-baskets of white Cherries, first, Messrs. E. H. Dean and Co.; three four-pound baskets of Black Cherries, first, Mr. E. B. Gascoyne. The number of entries in the other classes ranged from fifteen to forty. No fewer than nine challenge cups were awarded to the winning exhibitors.

NATIONAL DAHLIA.

At a recent meeting of the committee of the above society, the hon. secretary reported that H.R.H. Princess Louise, Duchess of Argyll, had consented, if then in town, to open the annual exhibition on September 10, in the Royal Horticultural Society's Hall, Vincent Square, Westminster. The secretary added that the Rt. Hon. Lord Lambourne, President of the R.H.S., had expressed his intention of being present on the occasion, and several members of the Council of the Royal Horticultural Society had promised to be present.

It was reported that forty-nine new members had been enrolled, some of whom resided in Canada, Sweden, Holland, Connecticut, U.S.A., Natal, Oregon, U.S.A., California' Queenstown, South Africa, and New Zealand. Five members of the committee were appointed to serve with five representatives, to be elected by the Floral Committee of the Royal Horticultural Society, on the joint committee for the purpose of inspecting and reporting upon Dahlias sent to Wisley for trial. The financial position of the society is considered to be satisfactory, and the committee has reason to believe that the display of Dahlias in the Royal Horticultural Hall in September will excel anything hitherto staged. All Dahlia enthusiasts are advised to communicate with the hon. secretary, Mr. W. Stephens, 17, Elers Road, Ealing, W. 13, who is sparing no effort to bring before the notice of the public the excellent qualities of this valuable late summer and autumn flower.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

The monthly meeting of this Society was held in the R.H.S. Hall on Monday, July 14, Mr. T. R. Butler presiding. Before commencing the business a vote of condolence was passed to the relatives of the late Sir Harry Veitch. The late Sir Harry was the Society's valued and respected patron, and by his death the horticultural world loses one of its most prominent figures. The Secretary represented the Society at the interment and a floral tribute was sent.

Twelve new members were elected. Five members withdrew interest from their deposit accounts amounting to £16 6s. 10d., and two members over 70 years of age withdrew other sums. Three died during the previous month, and the sum of £86 4s. 1d., plus the extra funeral benefit of £10 in two cases, and £15 in one case, was passed for payment to their respective nominees. The sick pay for the month on the private side came to £64 18s. 4d., and on the State side to £56 18s.; maternity benefits totalled £12. The sum of £18 10s. 6d. was granted for dental treatment to three cases, and four other cases were considered.

ELSTREE AND DISTRICT HORTICULTURAL.

The annual summer exhibition of the Elstree Horticultural Society was held on the 19th inst., in Aldenham Park, and visitors had the opportunity of inspecting the Hon. Vicary Gibbs' gardens which are in their full summer beauty. The show was an excellent one and the outstanding features were Roses, Sweet Peas, Water Lilies, and vegetables from the Aldenham House Gardens.

The Hon. Vicary Gibbs, in addition to giving his patronage to the show, acted as judge, presided at the luncheon, and presented the prizes to the successful exhibitors in the evening. All previous records of attendance at this show, which included an "Old English Fair" and a fire brigade competition, were exclipsed. A tent was allotted to the Women's Institutes from the three villages of Eldenham, Elstree and Boreham Wood, in which were arranged the competitive classes for rug making, needlework, glove and leather work, and cooking and preserving.

The chief class for Roses was for a decorative exhibit occupying a space nine feet by three and a half feet, and the first prize included a Silver Challenge Cup. The first prize was again won by Messrs. Chaplin Bros., who, having won the cup three times, it becomes their property. They made a very excellent display of pillars and epergnes of Roses of such beautiful sorts as Mrs. Henry Bowles, Innocence, a beautiful white single Rose; Los Angeles, Souvenir de Claudius Pernet and Mrs. Henry Morse; the second prize was awarded to Messrs. R. Harkness and Co., Hitchin, who followed very closely; third, Messrs. F. Cant and Co. Mr. J. N. Hart, Potters Bar, showed the best six vases of garden or decorative Roses in six distinct varieties and he had also the best three vases of Roses and the best single vase of Roses.

Sweet Peas were of excellent quality and there was good competition. In the class for twelve vases, distinct varieties, the first prize was won by Mr. R. W. Whitehead, St. Albans (gr. Mr. H. Munns). He showed excellent flowers of Charity, Constance Hinton, Mrs. A. Hitchcock, Jean Ireland, Mrs. Tom Jones and Royal Purple; second, Mr. Walter Martineau, Boxmoor (gr. Mr. C. Ball), who had splendid varieties of Hebe, Mrs. A. Hitchcock, Hawlmark Pink and others. In the class for six vases Mr. F. Stratford, Apsley, was placed first with beautiful flowers of Charming, Elegance, Powerscourt, Matchless, Hebe and The Sultan, second, Mr. Whitehead. For three vases of Sweet Peas, Mr. W. Martineau was an easy first. The best pink variety was Mrs. A. Hitchcock, shown by Mr. F. Stratford; the best white variety, Constance Hinton, shown by Mr. L. C. Haywood; the best crimson or scarlet variety, Charity, shown by Mr. Whitehead, who had also the best lavender coloured variety in Orchid; Mr. Stratford showed the best cerise or scarlet variety in Charming and the best cream, buff or ivory variety in Matchless.

The non-competitive exhibits were a great feature of the show. A magnificent collection of vegetables was staged by Mr. E. Beckett, the display being equal to the best he has ever made. It comprised over 160 dishes of the choicest vegetables, in season, and was always surrounded by a large and admiring crowd. Of outstanding merit were Peas, of such varieties as Quite Content, V.C., Alderman, Duke of Albany, Sugar Pea, and Edwin Beckett; and Potatos Stirling Castle, King Edward, Kitty Glover and others. Other very fine subjects were Aubergines, both white and purple; Cauliflowers of many varieties, and Celery of different sorts, both white and pink. Close to these ranged splendid Beets, Carrots in large variety, many kinds of Marrows, yellow and red Tomatos, and particularly fine Cucumbers.

Another outstanding exhibit was a collection of Nymphaeas shown by Major Pam, Broxbourne (gr. Mr. F. Streeter). The varieties included N. Marliacea alba, Gladstone, Escarboucle, Mrs. Richmond, and James Brydon, and arranged in association with the Water Lilies were waterside plants such as Rushes, Polygonum, Lysimachia, and Funkia. Mr. J. C. Allgrove staged pot trees of Gooseberries, Currants, Plums, Peaches, Cherries and Figs, and plates of Gooseberries of a great number of varieties. Messrs. W. Cutbush and Son displayed hardy border flowers in variety. Messrs. Toogood and Son, Ltd., showed Sweet Peas and Gladioli, and Messrs. Carter Page and Co. exhibited Roses and Violas.

Obituary.

Edward Brook.—We have to record the loss of a good supporter of gardening by the death of Mr. Edward Jonas Brook, of Hoddom, Dumfriesshire. The sad event took place on July 17 and much sympathy is felt throughout the district for Mrs. Brook in her loss. Mr. Brook was an ardent agriculturist and farmed a considerable portion of his lands in the most approved and advanced methods. He also took a warm interest in all county and rural affairs. His extensive gardens were always admirably kept and after his succession to the estate on the death of his father some twenty years ago, Mr. Brook effected considerable improvements there, and among these was the construction of one of the prettiest and most interesting rock gardens in the country, which was stocked with choice alpines, cultivated in the most admirable way, and in which their owner took great pleasure. All other departments, both indoor and outdoor, were thoroughly maintained in the high standard which prevailed on the estate.

Luke Fraser.—We regret to have to intimate the death, on July 17, under distressing circumstances, of Mr. Luke Fraser, gardener at Craigielands, Moffat, Dumfriesshire. Mr. Fraser seemed to be in his usual health, and on Wednesday evening left the house to take a walk. As he did not return Mrs. Fraser became anxious and went out to seek him and discovered him lying dead under a tree, death being apparently due to heart failure. Mr. Fraser, who was seventy-four years of age, had been head gardener at Craigielands for many years, and was very highly esteemed by his employers and his numerous friends. He was an able gardener and for a time a successful exhibitor at important shows. He was a general favourite, and much sympathy is expressed for Mrs. Fraser and family.

Dr. Robert Kidston.—It is with regret that we record the death, on 13th inst., of Dr. Robert Kidston, F.R.S., of 12, Clarendon Place, Stirling, one of the most eminent authorities on paleobotanical science, and one of our greatest authorities on the fossils of the carboniferous strata. Dr. Kidston was also much interested in living plants and his garden at Clarendon Place, Stirling, was always well worthy of a visit, a specially good feature being the rock garden, which was of considerable extent, constructed with a view to the welfare of the plants, and furnished with many of the choicest alpine flowers. Dr. Kidston at first followed a banking career, but being possessed of ample means he studied botany and afterwards took up the special branch in which he achieved a world-wide fame.

S. C. Wood.—It is with great regret we have to announce the death of Mr. S. C. Wood of Messrs. W. Wood and Son, Ltd., Taplow. Mr. Wood, who had been a director of the company for many years, died on Saturday last at the early age of forty-four years. The management of the business remains in the hands of his elder brother, Mr. A. J. Wood, the present managing director.

ANSWERS TO CORRESPONDENTS.

Apple Mildew: *R. G.* The shoots are affected with Apple mildew. Certain varieties of Apples are more susceptible to this trouble than others. Spray the trees in early spring, before the buds burst, with Bordeaux mixture or lime sulphur, at winter strength, and when the fungus makes its appearance spray with a mixture of soft soap and ammonium polysulphide. Badly diseased shoots should be cut back beyond the limit of attack.

Correction: Mr. J. B. Lowe, gardener to Major Geoffrey Lubbock informs us that his employer's exhibit won the second prize for Sweet Peas in the Prince of Wales Cup class at the recent Windsor show, and that Major Krabbe, whom our reporter stated was a close second, did not compete in that class.

Club Root on Cabbages: *J. E. D.* The specimens of Cauliflower, Cabbage, Savoy, and Brussels Sprouts were badly affected with Club root and we doubt if plants such as you sent will ever reach maturity. You will be well advised to destroy the lot, and you should obtain other supplies. No doubt the soil in your garden is infected with this fungus and it would be advisable for you to give the land a good dressing of lime before planting even healthy plants.

Cucumber Leaves Diseased: *R. B.* The Cucumbers are affected with Mosaic disease and the chief means by which the disease is spread from plant to plant is by insects, such as aphis and red spider. The disease may also be greatly spread by workers rubbing a diseased plant and then touching a healthy one, or by pruning knives after contact with a diseased plant. There is no cure for the disease and badly infected plants should be removed.

Iris Leaf Blotch: *T. G.* and *H. G. F.* The specimens sent are infected with the fungus Heterosporium gracile. All the diseased foliage should be removed in late autumn and burned. The ground should then be dressed with slaked lime at the rate of about two tons to the acre. It is not necessary to lift the plants in order to treat the soil. The lime should be forked into the soil directly after application, and it will be found that not only will growth develop clean and healthy in the spring, but it will remain so throughout the season.

Names of Plants: *F. M. F.* Rhus vernicifera. *W. V. P.* *a*, Gypsophila repens var. rosea; *b*, Sedum album; *c*, Sedum acre; *d*, Tunica Saxifraga; *e*, Corydalis claviculata. *Amateur*, If the plant lies down on the soil and is perennial, it is Satureia montana (Winter Savory), if upright and annual it is S. hortensis (Summer Savory). Both are good kitchen herbs, but leaves only do not show the difference. *S. C.* A narrow-petalled variety of Chrysanthemum maximum. *R. N. G.* Viburnum tomentosum. *A. F.* A yellow form of Scabiosa grandiflora.

Propagation of Cytisus racemosus: *L. E. X.* This shrub may be propagated by cuttings or by seeds. Cuttings should be taken during August when the wood has become ripened. It is best to procure the cuttings with a "heel." They should be dibbled in very sandy soil in a frame and kept close and fairly moist. The following spring when they have pushed out new roots the plants may then be transferred to small pots or planted out in the nursery beds If propagated by seeds these should be sown as soon as ripe and germinated in a slightly heated frame.

Communications Received. W. K.—J. R.—A. H.—F. D.—McH & Co.—W. H. B.—P. P.—W.H.B—Yeaton

MARKETS.

COVENT GARDEN, Tuesday, July 22, 1924.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations, It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated.)

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0-18 0
—elegans	10 0-12 0
Aralia Sieboldii ...	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-15 0
—Sprengeri ...	12 0-18 0
Aspidistra, green	48 0-72 0
Asplenium, per doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Cacti, per tray, —12's, 15's ...	5 0- 7 0
Crassulas, 48's, per doz.	21 0-24 0
Crotons, per doz.	30 0-42 0
Cyrtomium ...	10 0-15 0
Erica magnifica, per doz. ...	24 0-36 0
Hydrangea paniculata, per doz.	30 0-36 0
H. hortensis, white, 48's, per doz. ...	18 0-30 0
—blue, 48's, per doz.	30 0-42 0

	s. d. s. d.
Hydrangeas, pink, 48's, per doz. ...	18 0-24 0
Marguerites, white, 48's, per doz. ...	12 0-18 0
Mignonette, 48's, per doz. ...	10 0-12 0
Nephrolepis, in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia ...	24 0-30 0
—60's	15 0-18 0
—Cocos	24 0-36 0
Pteris, in variety	12 0-21 0
—large 60's ...	5 0- 6 0
—small	4 0- 4 6
—72's, per tray of 15's	3 6- 4 0
Rhodanthe, pink and white, per doz.	9 0-12 0
Roses, Polyantha, 48's, per doz. ...	15 0-21 0
Spiraeas, pink ...	21 0-27 0
Stocks, white, 48's, per doz. ...	12 0-15 0
—coloured, 48's, per doz. ...	18 0-24 0
Verbena, Miss Wilmott, per doz.	12 0-15 0

Cut Flowers, etc. Average Wholesale Prices.

	s. d. s.d.
Achillea, The Pearl, per doz. bun.	2 0- 4 0
Adiantum decorum, doz. bun.	10 0-12 0
—cuneatum, per doz. bun. ...	6 0- 9 0
Alstroemeria, per doz. bun. ...	5 0- 8 0
Asparagus plumosus, per bun.	
long trails, 6's	4 0- 5 0
med. sprays ...	2 6- 3 6
short ,, ...	1 0- 1 6
—Sprengeri, per bun.	
long sprays ...	3 0- 3 6
med. ,, ...	1 6- 2 6
short ,, ...	1 0- 1 3
Carnations, per doz. blooms ...	1 0- 2 6
Chrysanthemum maximum, per doz. bun. ...	2 6- 3 6
—Shasta Daisy, per doz. bun. ...	2 0- 3 0
Coreopsis, per doz. bun.	2 6- 3 0
Cornflowers, per doz. bun. ...	1 0- 1 6
Croton leaves, var., doz. bun.	2 0- 2 6
Delphinium, per doz. bun. ...	3 0- 5 0
Fern, French, per doz. bun. ...	1 0- 1 3
Gaillardia, per doz. bun.	2 0- 3 0
Gardenias, per box, 12's	4 0- 6 0
Gladiolus—	
—Blushing Bride, per doz. bun. ...	9 0-12 0
—The Bride, per doz. bun. ...	10 0-15 0
—salmon, per doz. spikes	2 0- 3 0
—scarlet, per doz. spikes	2 6- 3 0
—pink, per doz. spikes	2 6- 3 0
—white, per doz. spikes	3 0- 3 6
Gypsophila per doz. bun. ...	— —
—paniculata, per doz. bun. ...	12 0-18 0
Heather, white, per doz. bun. ...	9 0-12 0

	s. d. s.d.
Iceland Poppies, per doz. bun. ...	2 0- 2 6
Lilium lancifolium album, per doz. blooms... ...	3 6- 4 0
Lilium longiflorum	
long, per doz....	4 0- 5 0
short ,, ,, ...	3 6- 4 0
—rubrum long, per doz. blooms ...	3 0- 3 6
—short ,, ,, ...	3 0- 3 6
Lily of the Valley, per doz. bun. ...	30 0-36 0
Orchids, per doz.	
—Cattleyas ...	24 0-30 0
Pelargonium, white, per doz. bunch	8 0- 9 0
Roses, Richmond, per doz.... ...	1 6- 2 6
—Frau Karl Druschki, per doz.	1 0- 2 6
—Mme. Butterfly, per doz. blooms	2 0- 3 0
—White, per doz.	2 0- 3 0
—Columbia, per doz.	1 6- 3 0
—Ophelia, per doz.	1 6- 2 6
—Sunburst, per doz.	2 0- 2 6
—Mme. Abel Chatenay	1 6- 2 6
Statice, mauve ...	5 0- 8 0
Stephanotis, per 72 pips	— 3 0
Sweet Peas, per doz. bun. ...	3 0- 6 0
Smilax, per doz. trails	4 0- 5 0
Scabiosa caucasica, per doz. bun. ...	3 0- 4 0
Stock, double white, per doz. bun.	6 0-12 0
Sweet Sultan, mauve, per doz. bun.	4 0- 6 0
—white, per doz. bun.	4 0- 6 0
Tuberoses, per packet	1 6- 2 0
Violas, per doz. bun.	2 6- 3 0

Remarks.—Similar conditions prevail as those given last week. Outdoor blooms are arriving in large quantities and prices fluctuate according to the quantity marketed. The supply of Carnations generally exceeds the demand, although best quality blooms were a better trade this morning. These also vary in price according to the quality. Of Roses best red blooms are the scarcest, but practically all varieties are shorter on the stems at the present time. Lilium longiflorum is again on the up grade; the quality continues to be good; pink and white L. lancifolium are also in good demand and prices are unchanged for this week. There is a glut of the large-flowered Gladioli.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans—	
Guernsey ...	0 4- 0 6
Worthing ...	0 4- 0 8
—½-sieve	4 0- 5 0
Beets, new, per doz. bun. ...	2 0- 3 0
Cabbage, per doz.	0 9- 1 0
Carrots, new, per doz. bun. ...	1 6- 2 6
Cauliflower, crates, 24's, 30's ...	3 0- 5 0
Cucumber, 3 doz., 3½ doz., 4 doz....	12 0-16 0
Endive, French, per doz.... ...	— 4 0
Green Artichokes, doz.	1 0- 2 0
Greens, bag ...	2 0- 2 3
Lettuce, English, round, per doz.	1 0- 1 6
—long, per doz....	1 0- 1 6
Marrows, doz. ...	2 0- 3 6
Mushrooms, lb. ...	2 0- 3 0
Mint, doz.... ...	3 0- 4 0

	s. d. s. d.
Onions, Valencian, cases ...	7 6- 9 0
Parsley, flat ...	2 0- 3 0
Potatos, English, cwt.	7 0-10 0
Radishes—	
Round	1 6- 2 6
—Long	1 0- 1 6
Peas, blue, bushel	5 0- 6 0
—bags (70 lb.) ...	4 0- 9 0
Spinach, bushel...	3 0- 4 0
Spring Onions, per doz. bun. ...	4 0- 6 0
Tomatos, English, pink and white	5 6- 6 6
— blue	4 6- 5 0
— white	4 6- 5 0
—Guernsey ...	5 0- 5 6
Broad Beans, per bushel	2 6- 3 6
Turnips, new, per doz. bun. ...	2 6- 3 6

Remarks.—The general demand has not been so brisk several subjects selling with less freedom. Choice fruits, such as Grapes, Peaches, Nectarines, Figs and Melons are a steady trade, with a fairly steady price level. English Cherries have not been arriving in particularly good condition and on the whole recent arrivals of ordinary white sorts, such as Bigarreau, have not realised very good prices. Bigarreau Napoleon, when in hard condition, has sold well at satisfactory figures. Gooseberries are plentiful, specially large dessert varieties, and considering the large quantities, they have sold at good prices. Raspberries seem to be finishing for the season and the recent rains have affected the later berries adversely. Red Currants have been a variable business, prices moving between comparatively wide levels. Black Currants are shorter, after a week of very heavy quantities both of home-grown and Dutch. Values have been steady throughout, prices never being unduly low, except for berries that have been over ripe. Tomatos are cheaper; supplies from Holland and other parts of the Continent bringing down prices. Cucumbers are a quiet trade, Dutch produce being the adverse factor from the home-producers' point of view. Mushroom prices have shown several fluctuations during the past week. Forced Beans are not now wanted, outdoor pods now being in better supply. Peas, although a better trade, are still cheap and plentiful. Green vegetables are not moving freely. The Potato trade is quiet.

GLASGOW.

The turnover in the three sections of the market was well maintained during the past week and prices were steady and without any particular movement in either direction. As a result of the warm weather supplies of cut flowers from the south are arriving in poor condition and the local grown flowers are also of a mixed quality. Gladioli have ranged from 6d. to 10d. for 6's; Carnations (all varieties), 1/- to 1/6 per doz. Roses; (Mme. Abel Chatenay, Ophelia and Mme. Butterfly), 9d. to 1/6; Sweet Peas, 2d. to 6d. per bunch; Gypsophila, 3d. to 6d.; Erigeron, 2d. to 5d. and Iris (grown locally), 6d. to 1/-

Consignments of fruit continue to be heavy, and meet a ready sale. The Southampton and Wisbech Strawberry season being over, the market is now dependent on Scotch supplies and the variation in quality is reflected in the wide fluctuation in prices. Royal Sovereign variety and selected fruit reached 1/10½ per lb.; Ruskin sold at 10d. to 1/- while ordinary qualities sold for about 8d. per lb. Early this week small consignments of English Strawberries were disposed of at 1/6 per chip. Considering the large quantities now coming into the market Tomato prices are returning a good yield to the producer, Scotch averaging from 10d. to 1/- per lb.; English 8d. to 10d.; and Guernsey 6d. to 8d. The closing quotations of English-grown fruit were as follow:—Cherries, 9/- to 10/-; Raspberries, 9d. per lb; Black Currants, 9d. and 10d.; Green Gooseberries, 2½d. per lb., Red, 7/- per sieve; Greengages, 15/- ½-sieve; Dutch Black Grapes, 2/- per lb.; New Zealand Apples, 27/- per case.

Scotch-grown vegetables are now competing with the English produce and in consequence supplies of some varieties occasionally exceeds the demand. Prices however display a firm tone. Lettuce realised from 1/3 to 1/9; Turnips, 3/6 to 4/- per doz. bunches; Carrots, 2/6 to 3/-; Spring Onions 3/- to 6/-; Cabbage 2/-; Cauliflowers 3/6 to 4/-; Beet 3/- to 4/-; Peas 7/- per pot; Marrows 8/- per pot; and Cucumbers 6/- to 7/- per doz. A small feature was the cheapness of Parsley of which there was a glut at 8/- per cwt.

GARDENING APPOINTMENTS.

Mr. T. Prowting, for the past four years Gardener to Col. E. R. G. Hopwood, Hopwood Hall, Middleton, Lancashire, as Gardener to the same gentleman at Chester House, Wimbledon Common. (Thanks for 2s. for R.G.O.F. Box.—Eds.).

Mr. Neil McMullan, for the past four years Foreman at Kildonan, Barrhill, Ayrshire, and previously Foreman at Keir, Dunblane, as Gardener to Major Oswald, Auchincruive, Ayr. (Thanks for 2s. 6d. for R.G.O.F. Box—Eds.)

THE
Gardeners' Chronicle
No. 1962—SATURDAY, AUGUST 2, 1924.

CONTENTS.

Alpine garden—
  Campanula W. H. Paine 74
  Saxifraga Huetiana ... 74
Antwerp International Horticultural Exhibition 70
Books, Notices of—
  Rice 75
Bulb garden—
  Snowdrops 74
  White-flowering Tulips 74
Cultural memoranda—
  Syringing fruit trees under glass 85
Florists' flowers—
  Chrysanthemums ... 76
Fruit crops, reports of the hardy ... 69, 79
"Gardeners' Chronicle" seventy-five years ago 71
Ginger, preserved ... 70
Hardy flower border—
  Delphiniums 71
Horticulture at the British Empire Exhibition 74
Imperial Botanical Conference 77
Long Ashton Research Station, field day at the 76
Lulworth Cove... ... 70
National Chrysanthemum Society 69
National Diploma in Horticulture, award of the 70
Nursery notes—
  Daniels Bros., Norwich 85
Obituary—
  Dray, George... ... 88
  Waterer, Anthony ... 88
Pinus rudis 86
Plants new or noteworthy—
  Rosa Banksiae hybrid di Castello 73
Red Spider 70
Societies—
  Brentford Allotment 87
  British Florists' Federation 87
  Horticultural Club ... 88
  National Carnation and Picotee ... 86
  Reading Gardeners' 87
  Royal Horticultural 87
  Royal Horticultural of Ireland 86
  Royal Oxford Horticultural 86
  Saffron Walden ... 87
Soot and wireworm ... 70
Southport Show, challenge trophy for fruit at... 60
Spooner, Mr. Herman ... 70
Strawberry The Duke 86
Trees and shrubs—
  Leycesteria formosa... 78
Week's work, the ... 72
Xanthoceras sorbifolia 78

ILLUSTRATIONS.

Carnation Myrtle Pettigrew 75
Hemerocallis hybrida Lady Hesketh 71
Rosa Banksiae hybrid di Castello 73
Silver challenge trophy to be offered at the Southport show 85
Spooner. Mr. Herman, portrait of 70
Xanthoceras sorbifolia, flowering spray of, 77; tree of, in the Cambridge Botanic Gardens 78

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 62·3.

Actual Temperature:—

Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 30 10 a.m.: Bar. 29.8°: temp. 60°. Weather, Bright.

The Hardy Fruit Crops. Our reports on the condition of the hardy fruit crops (see pp. 79–84) show that there is considerable divergence in the yield of the different kinds of hardy fruits this season. Unfortunately, those that have failed are the more important crops and of these Apples and Plums are both very scarce. But there are compensations, for, generally, the fruits are of the finest quality, the trees healthier and freer from both pests and diseases than for some years past, whilst trade growers are certain to get better returns than if their orchards and plantations were over-cropped, for a glut usually means a loss to them. At one period the prospects were such as gave promise of most bountiful crops of all kinds; for instance, there was a remarkable show of blossom on all fruit trees. Moreover, the blossoming period was late, owing to the prolonged winter, which did not terminate until May and even in some parts of the country frost occurred so late as June. Many growers attribute the deficiency of their crops to the wet weather and cold winds during the time when the trees were in flower, but this is probably only part of the cause of the deficient yields. The chief reason must be looked for in the unfavourable autumn of the previous year, there being so little sunshine that the wood and fruit-buds did not mature satisfactorily. Following a period of two or three years with only scanty fruit crops the trees had developed an unusual number of fruit buds, but as the wood was not well matured the blossoms were comparatively weak, and doubtless the very fact of there being so many of them contributed to their weakness. It is reported that certain trees with strong blossoms set fair crops at a time when the weather was unfavourable, with cold east winds, whereas the late-flowering Apple Court Pendu Plat, which expanded its flowers later and in more favourable circumstances, failed to set fruits. Another contributory cause to the weakness of the blossom was the severe epidemic of insect pests last season, especially aphides; the check to the trees from this alone was a very severe one and is doubtless reflected in the meagre crops of the present year. In this connection it is remarkable that, following a year when enemies were so numerous in orchards and fruit plantations, the trees are exceptionally clean this season, and in addition to making healthy wood and leaf-growth, the crops of all kinds promise to be of exceptionally fine quality. It would be interesting to know the reason why certain pests may be so numerous in one year as to constitute a plague and yet be almost absent the following season; the same thing has been known to occur in the case of some of the smaller vermin, voles in particular forming a plague in some years and being very little in evidence the next. It may be that the outbreaks occur in cycles and it would be interesting to know if records exist having any bearing on this subject. Taking the various fruits in detail it will be seen that the Apple crop is a very poor one, for whilst only fourteen growers report more than an average yield and seventy-five an average yield, ninety report a deficiency of this most useful crop. It is interesting to notice that the number of "average" and "over" crops are almost exactly equal to the number of "under" crops. There is some satisfaction in the fact that the Apple yield is much better than in 1923 when no fewer than 135 reporters out of 183 recorded an "under" crop. Pears are disappointing, for it looked at one time as though there would be a record crop of this fruit. Never have Pear trees bloomed more profusely and everything pointed to a splendid harvest of Pears, but whilst the Pear crop is one of the most satisfactory of the top fruits, there are sixty-five cases of crops below the average out of a total number of 177 records. Several growers are fortunate in having an "over" crop and there are seventy-seven returns of an average yield. The Plum crop is one of the most disappointing of all, for only one grower records a crop over the average, whilst 149 out of 176 returns show an "under" crop, and only twenty-six record an average yield. The Plum crop is almost as bad as last year, which was certainly one of the worst on record. Silver-leaf disease is probably responsible for much loss, and growers will be wise to take stern measures, even to the uprooting of diseased trees and burning them, to help check the spread of this insidious complaint of one of our most useful fruits. The Cherry crop is one of the best we have had for some years, but we fear that many of the fruits were spoiled by the rains which occurred when they were just ready for harvesting. However, out of 170 records, there are eighty-three showing average yields of Cherries and twenty-seven with yields above the normal. Perhaps the surprise of the season is the splendid crop of out-door Peaches and Nectarines, and the surprise is the greater seeing that both the Peach and Nectarine are natives of a much warmer climate than that of this country, so that we should expect the unfavourable autumn of last year to have re-acted more adversely in their cases than in that of the hardier kinds of fruits, such as Apples and Plums. The good yield may, however, be due to the fact that these trees are in nearly all cases trained against warm walls and several of our correspondents have recorded that their wall trees of Plums and Pears are carrying much better crops than those in the open. The extra warmth and shelter of a wall may have made just that little difference in the ripening of the wood to account for the excellent crops on wall trees. Apricots, which are always an uncertain crop, are very scarce, for out of ninety records, seventy-one are under the normal yield, only one over, and eighteen show average crops. Small fruits, including Gooseberries, Currants, and Raspberries are always consistently good, but this year they appear to be better than usual, indeed, both Black and Red Currants have not only been plentiful, but of a better quality than for many years past. The same is true of Raspberries. The reason is probably to be found in the generous amount of moisture which fell this spring and early summer, for, as is well known, these fruits are surface rooting and suffer greatly during times of spring drought. It is gratifying to know that only six out of 179 of our reporters have "under" yields of small fruits. Strawberries, too, have been very good and plentiful, but the season, although a late one, finished quickly so that the Strawberry crop was soon over. Nuts, which are not so generally grown as other fruits, are yielding better than last year, but not so plentifully as in 1922.

Challenge Trophy for Fruit at Southport Show.—The very handsome Silver Challenge Trophy illustrated on p. 85 has been presented for competition at the Southport Show on August 27 by the Southport Hotels and Hydros. This beautiful specimen of the silversmith's art will be offered as the premier prize in the open class for the best decorated table of fruit. The trophy consists of four pieces, namely a stand and three very artistic fruit dishes, each of which may be used separately if so wished. The total weight of the trophy is 103 ounces, and the managers of the Southport exhibition must consider themselves extremely fortunate in being presented with such a handsome prize.

National Chrysanthemum Society.—The schedule of the National Chrysanthemum Society's exhibition, which will be held in the Royal Horticultural Society's Hall, Westminster, on November 6 and 7, is as comprehensive as usual and includes some forty-five classes, the chief of which is the one for thirty-six Japanese blooms in twelve varieties, three blooms of each sort, staged in vases. For this competition prizes of £10, £6 and £4 are offered to exhibitors other than traders. This class was especially good last year and the arrangement of the exhibits on low tabling afforded a good opportunity of seeing the collective displays. There is a similar but smaller class for eighteen Japanese blooms in six varieties, for which prizes of £5, £3 and £2 are offered. The President, Sir Jeremiah Colman, Bt., offers a Silver Cup or Bowl, valued £5 5s., in a class for twenty-four Japanese blooms distinct. These are all open classes and in this section there are classes for incurved blooms, Anemone blooms, Pompons and singles. The last type of Chrysanthemum has become very popular in recent years and of great importance as a market flower. In class 20 Mr. P Ladds offers prizes for six vases of large, single Chrysanthemums, distinct, and Mr. H. J. Jones offers a prize for one vase of small-flowered singles. The George Monro Challenge Cup is offered in Section 3 for twelve vases of large singles. It will be remembered that last year the President, Sir J. Colman, offered prizes in a class for an arrangement of Chrysanthemum blooms suitable for the decoration of a hall, hall table, or side board. This brought out a very interesting competition but it is to be hoped that even more interest will be taken in this class by exhibitors than last year, for the great value of the Chrysanthemum lies in its suitability for indoor decorations as cut blooms and the largest-sized flowers are very ornamental in big receptacles in halls. As usual, Messrs. Clay and Son offer a Gold Medal for the best non-competitive exhibit in the show. Schedules may be obtained on application to the Secretary, N.C.S., 5, Tavistock St., Covent Garden, W.C. 2.

Broadcasting Agricultural Information.—From the beginning of October next the Ministry of Agriculture has arranged with the British Broadcasting Company to issue from their headquarters in London a regular fortnightly bulletin containing information designed mainly to assist and interest agriculturists and others concerned in the land and its cultivation. About fifteen minutes will be taken up by each fortnightly message, which will deal briefly with the main tendencies of the chief markets, will offer observations on such matters as the methods employed in current agricultural practice and will include a short talk on some special seasonal topic. This talk will be prepared with a view to its being of interest not only to the agriculturist, but to others of the larger public who live in the towns.

Soot and Wireworm. — The virtues of soot have often been extolled and although the chemist may be sceptical, the gardener knows how useful soot is. An instance has recently come to our knowledge in which attack by Wireworm was arrested by means of dressings of soot. Before the application the attacks were so serious that sturdy seedlings and also young plants of Tomatos were destroyed. After the application no more loss was suffered.

Red Spider.—Experiments carried out in the Research Laboratory of the Nursery and Market Garden Industries Development Society* by Mr. Speyer give some hope of the discovery of more efficient means of controlling this troublesome pest. One method which appears to be worth adopting is that of the winter treatment of glasshouses in which red spider is suspected of hybernating. The treatment consists of spraying the house with cresylic acid and soft soap. The beneficent effect seems to be due to contact action. Another method which is promising is to spread white flake naphthalene on the hot water pipes during the growing season.

Lulworth Cove.—As recently stated in these columns, Mr. Justice Sankey decided that the War Office should, within one month, vacate Lulworth Cove, the Dorsetshire beauty spot. It appears now, however, that the War Office intends to remain and to exercise its special powers to purchase the land if suitable terms can be arranged. It seems incredible that the War Office should exercise this power in face of the strong protest already raised against the retention of this lovely cove and unless its retention is vital in connection with the Defence of the Realm.

Mr. Herman Spooner.—Born in 1878 at Lawford, Essex, Mr. Spooner commenced his gardening career in that county and subsequently attended courses of instruction in horticulture at the County Technical Laboratories, Chelmsford (now the East Anglian Institute of Agriculture). He won a county scholarship and entered the Royal Horticultural Society's Gardens at Chiswick as a student. Later he became a student at Kew and took the usual courses of lectures. In 1901, he was appointed botanical assistant to Messrs. James Veitch and Sons, and while at Chelsea he had charge of the Veitchian library and was engaged on the preparation of catalogues, advertisements, and exhibition arrangements for the firm. It was part of his duty to keep records of seeds, bulbs, plants, and herbarium specimens sent home from China by the famous collector, Mr. E. H. Wilson. Mr. Spooner compiled the *Hortus Veitchii*, published in 1906; this work is a horticultural record of the Veitch family during fifty years at Chelsea and contains information of the origin of many garden plants that has a historical value. Mr. Spooner left Messrs. J. Veitch and Sons in 1906, and succeeded Mr. E. H. Wilson as Assistant Superintendent of collections at the Imperial Institute, South Kensington. Since 1919, he has been Acting Senior Technical Superintendent at the Institute. The Indian and colonial collections at the Imperial Institute consist mainly of samples of raw products of economic importance produced in the various countries of the Empire, *e.g.*, minerals, timbers, fibres, cereals and pulses, gums and resins, oil seeds and oils, Tea, Coffee, Cocoa, drugs, etc. — a miniature Wembley, in fact, without the side-shows and amusements. Mr. Spooner has been a frequent visitor to the Royal Horticultural Society's meetings since those Chiswick student days when he was in attendance on the Orchid Committee. He has contributed many articles on economic products to the *Bulletin* of the Imperial Institute and is an occasional contributor to the *Gardeners' Chronicle*. The Chinese species, Clematis Spooneri, commemorates his association with Wilson's Chinese introductions. Mr. Spooner's knowledge of the Empire's economic vegetable products is extensive and peculiar, and overseas visitors to the Imperial Institute are more than satisfied if Mr. Spooner is able to act as their guide and advisor.

MR. HERMAN SPOONER.

Preserved Ginger.—Hong Kong is the centre of the dried and preserved Ginger industry, the Ginger roots being imported to Hong Kong from Canton and other districts. The exportation of fresh Ginger from Canton amounted to 9,779,357 lbs. in 1922. According to the *Journal of the Royal Society of Arts*, it is collected by Chinese dealers from small, up-country growers, and shipped to Canton in junks. The fresh Ginger, after being washed, is put into a vat and boiled for about an hour. The water is then drained off, an equal amount of sugar as of Ginger added, with sufficient water for boiling, which is continued for an hour. It is then ready for packing into casks or jars for shipment abroad.

Antwerp International Horticultural Exhibition.—The schedule of the exhibition to be held at the Salle des Fêtes, Antwerp, from September 13 to the 21st, has reached us and, as is usual in many similar Belgium publications, it is printed both in Flemish and in French. The enterprise has the patronage of Their Majesties the King and Queen of the Belgians, the Belgian Minister of Agriculture, the Governor of the Province of Antwerp, the Burgomaster of Antwerp and other influential people, in addition to most of the leading Belgian horticulturists. There is also a fairly large Comité d'Honneur-Etranger on which the British representatives are Mr. J. S. Brunton, Mr. C. H. Curtis, Mr. George Monro, and Mr. C. E. Pearson. The schedule provides sections for Orchids, New Plants and Flowers, Out-door Plants, Shrubs, Dahlias, Fruits, Vegetables, Market Gardening, Floral Art, Garden Design and Horticultural Industries. The awards will consist of works of art, gold medals in three grades, silver-gilt medals and silver medals. During the exhibition period conferences will be held, concerts and illuminated fêtes arranged and visits organised to notable horticultural establishments in and around Antwerp. A Colonial Fair which is being held in Antwerp throughout the whole of September will be an additional attraction. Schedules of the Antwerp Horticultural Exhibition may be obtained from the Secretary General, 28, Rue du Moulin, Antwerp. Mon. Van Rijsselberghe, Director of the Antwerp Parks and Woods is one of the secretaries and he will also be responsible for the design and arrangement of the exhibition.

National Diploma in Horticulture.—The Royal Horticultural Society's National Diploma in Horticulture has been awarded to the following as a result of the written and practical examinations for the Diploma held this season:—*Section* 1, *General Horticulture*: Mr. Robert Wightman, 35, Watering Cottages, Aldeburgh; Mr. Charles P. Barrett, Monte Rosa, 24, Granville Road, Bournemouth; Mr. Charles R. S. Gregory, 34, Leabourne Road, Stamford Hill, N. 16; Miss Grace E. Pollard, St. Leonards, Park Road, Edinburgh; Miss Cecily M. Christy, 51, Broomfield Road, Chelmsford. *Section* 2, *Hardy Fruit Growing*: Mr. Eric H. M. Barker, Walton Villa, Long Ashton, Bristol; Mr. Jesse Amos, High Street, East Malling, Kent; Mr. Arthur Wm. Witt, Broomfield, Offham Road, West Malling. *Section* 6, *Gardening in Public Parks*: Mr. Gilbert J. W. Cule, 17, Palmerston Street, Moss Side, Manchester. *Section* 8, *Horticultural Teaching*: Mr. Robert Wightman, 35, Watering Cottages, Aldeburgh, Suffolk; Miss Grace E. Pollard, St. Leonards, Park Road, Edinburgh (these two candidates qualified also in Section 1). The following have also passed the Preliminary Examination and will be eligible to take the Final Examination when they have completed the necessary six years of practical experience in gardening: Mr. William B. Pymont, Rodway Hill, Cannington, nr. Bridgewater; Miss Hilda Broadbent, Moorland Place, Halifax; Mr. Alexander Turner, 23, Upper Leeson Street, Dublin; Mr. William H. Barker, G.I.F. Sarisbury Court, Swanwick, Southampton; Miss Helen M. Richards,

---

* Experimental and Research Station. *Ninth Annual Report*, 1923. The Cheshunt Press, Ltd., 1924.

Studley College, Warwickshire; Mr. William J. Moyse, Sarisbury Court, Swanwick, Southampton; Mr. Andrew M. Cumming, Streatham Hall Farm, Exeter, Devon; and Mr. Frederick Flippance, Lane End House, Shinfield, Reading.

Appointments for the Ensuing Week.—Sunday, August 3: Wakefield and Northern Tulip Society's meeting. Monday, August 4: Shoreham Horticultural Society's show; Heathfield and District Horticultural Society's show; Bishops Stortford Horticultural Society's show; Romsey and District Horticultural Society's show. Tuesday, August 5: Royal Caledonian Horticultural Society's meeting; Walsall Horticultural Society's show (2 days); Abbey Park Flower Show (2 days). Wednesday, August 6: National Rose Society's provincial show in conjunction with the Scottish National Sweet Pea, Rose and Carnation Society's show at Glasgow (2 days); Northampton Horticultural Society's show (2 days); King's Walden Bury Flower Show; Royal Agricultural Society's meeting; Morley and District Paxton Society's meeting. Thursday, August 7: Market Bosworth Horticultural Society's show. Friday, August 8: Royal Horticultural Society of Ireland Council meeting. Saturday, August 9: Glasgow and West of Scotland Horticultural Society's outing; Auchencrow (Berwickshire) Flower show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Cupressus funebris, or Funebral Cypress.*—Messrs. Standish and Noble, Nurserymen, Bagshot, have the honour to inform Noblemen, Gentlemen, and the Public, they have been successful in obtaining seeds of the above beautiful weeping Cypress from the north of China, and are now ready to send out fine healthy seedling plants at 21/- each. This splendid tree is a great favourite with the Chinese, and in the north of China used by them principally for planting in their burial grounds, where it often attains the height of sixty feet, and forms one of the most beautiful Evergreen weeping trees known to botanists. It was first discovered by Lord Macartney and Sir George Staunton, in the great Vale of Tombs, in the north of China, and dried specimens were brought home by Sir George Staunton who, in Lord Macartney's mission or voyage to China, thus describes the Vale of Tombs and the plant: "The Lake formed a beautiful sheet of water about three or four miles in diameter and surrounded to the north, east and south by an amphitheatre of picturesque mountains; upon the summit were erected pagodas, one of which attracted particular attention. It was situated on a bold peninsula that juts into the lake, and was called the Lui-Soong-ta, or Tower of the Thundering Winds. It is said to have been built in the time of the philosopher Confucius, who lived three centuries before the Christian era. In the Vale of Tombs the variety of monuments is almost infinite. These monuments of departed greatness are surrounded by trees—such as different species of the Cypress, whose deep and melancholy hue seems to have pointed them everywhere out as well suited for scenes of woe. The churchyard Yew did not, however, grow there, nor was it observed in any part of China; but a species of weeping Thuja, or Lignum vitae, with long pendant branches, unknown in Europe, overhung many of the graves." In the plate of the Vale of Tombs, the weeping tree in the foreground near to the Tower of the Thundering Winds is this plant, and it has since been proved by botanists to be the weeping Cypress. Messrs. Standish and Noble obtained, last winter, from the north of China, dried specimens and cones of the above tree, which were forwarded to Dr. Lindley and Sir Joseph Hooker, who at once pronounced them to be the famous Funebral Cypress (see leading article in the *Gardeners' Chronicle* of the 21st April last). *Advt. Gard. Chron., August* 4, 1849.

HARDY FLOWER BORDER.

DELPHINIUMS

Delphiniums are among our choicest border flowers; they are of very imposing appearance and give bold masses of stately flower spikes, usually in rich shades of blue. They are perfectly hardy and easily increased by division or seeds; the former method of propagation is necessary in the case of named varieties. One of the finest of all named sorts is King of Delphiniums; its tall and Loveliness, Queen Mary and Rozenlust. Perhaps the most showy variety of the rich blues is F. W. Smith with tall handsome, well furnished spikes, closely set with large, semi-double flowers of a clear Gentian blue with a conspicuous pure white centre. The dwarfer, more branching and continuous blooming varieties of Delphininum Belladonna are all exceedingly decorative border plants and most useful where cut flowers are in demand. The delicate blue shades of the type, D. Belladonna grandiflora and the varieties Persimmon, Capri and Mrs. Brunton, also stately flower spikes are closely set with semi-double flowers of a rich Gentian blue and Plum colour, set off by an imposing white eye. Equally effective are The Alake, General Sir Douglas Haig, Dusky Monarch, Prince Gustave, Mrs. Creighton and King Bladud; the last is very distinct and handsome, the blooms somewhat resembling those of a double-flowered Ranunculus. The flowers are a rich cobalt-blue, borne on stately well branched spikes. François Nagels is an intense dark blue variety with a conspicuous white eye.

Among the softer and more delicate shades are Queen of Bath, Andrew Carnegie, Boerhave, Nettie, Coronet, Marie Closon, La France, the darker shades of Lamartine, Mrs. Thompson and Theodore, and the semi-double D. Belladonna semi-plena, with most attractive sky-blue flowers, are all worthy of inclusion in the flower border.

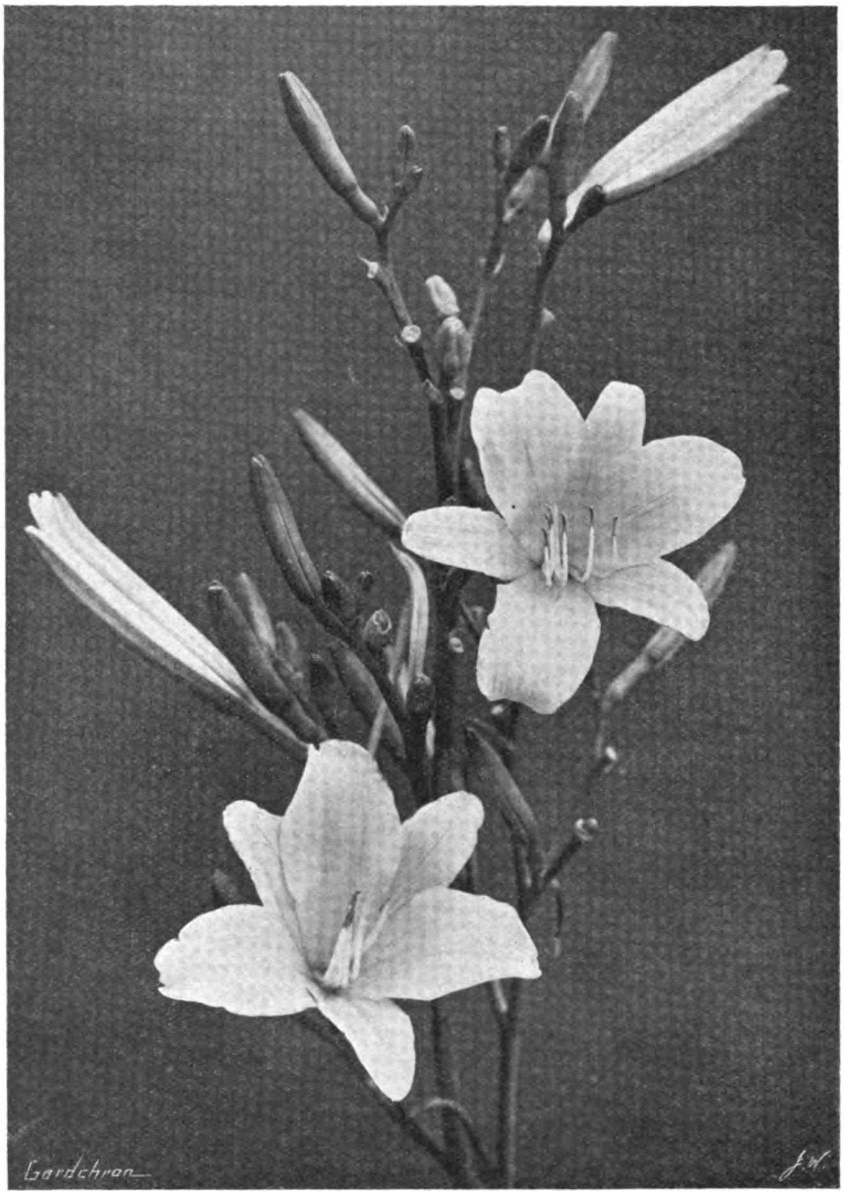


FIG. 25.—HEMEROCALLIS HYBRIDA LADY HESKETH.

R.H.S. Award of Merit, July 22 (see p. 65).

The culture of the Delphinium is most simple; it may be planted from September to April. During times of drought copious supplies of water should be given the roots. It is also beneficial to give the plants during their growing season (from May onwards) a little finely ground bone-meal, which should be well forked into the soil about the roots. A dressing of sifted coal ash placed around the crowns during the plants' resting season will act as a deterrent to slugs. *W. Logan.*

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Dendrobiums. — Where the cultural conditions have been favourable, the season's growth of these plants will be near completion, and very soon after the terminal leaf appears they should be subjected to somewhat drier and cooler conditions, either by lowering the temperature of the house they now occupy or by removing them to a light, airy structure, the object being to bring about the thorough ripening of the pseudo-bulbs. Water should be gradually withheld from the roots and applied only when the soil appears to be dry. The plants should be syringed daily overhead for the present, but syringing should be discontinued and water at the roots further reduced so soon as the pseudo-bulbs are completely at rest. They may be loosely tied to neat stakes, or be allowed to assume their natural dependent habit. Dendrobium Wardianum in particular blooms more freely, and its flowers are shown to better advantage when the pseudo-bulbs are allowed to hang naturally. Plants that are still developing freely should be grown in plenty of heat and moisture in accordance with their various stages of growth.

Increasing Dendrobiums.—Aerial shoots sometimes push forth from the pseudo.bulbs of Dendrobiums, and where it is desired to increase the stock, these may be taken off and placed singly in small pots or several may be arranged together in larger receptacles. After being potted they should be shaded slightly and afforded plenty of heat and moisture until they have become well rooted in the compost, when they should be given a season of rest. The new growths of Dendrobium Phalaenopsis are in an advanced stage of development, and the plants should be supplied liberally with moisture, both at the roots and in the atmosphere. They should be syringed overhead in the afternoons of bright days. The blinds should be drawn up after closing the ventilators in order to promote a hot, humid atmosphere.

Dendrobiums of the racemose section.— D. thrysiflorum, D. densiflorum, D. Schroederi, and others of the racemose section will be in the middle of their growing season and should be treated generously. When these plants commence to send out fresh roots from the base of the young growths they may be repotted if necessary. These Orchids thrive best when grown in the Cattleya or intermediate house. Other species of this section including D. Dalhouseianum, D. fimbriatum, D. suavissimum, D. chrysotoxum, and the hybrids D. illustre, and D. Gatton Sunray delight in a warmer atmosphere all through their growing season.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Planting Bulbs.—It may seem early for planting bulbs, yet far better results are obtained from planting such early-flowering subjects as Winter Aconite, Snowdrop, Leucojum, Crocus, Squills, Bulbous Iris and Anemone apennina now, than later in the autumn. The Winter Aconite should be planted in large patches in the grass or under trees near the residence, and the bulbs may be left in the ground for years. Snowdrops are amongst our hardiest flowers and their snow-white bells are always welcome in early spring. They are most effective when planted in clumps and may be left undisturbed for years. Leucojum vernum, which is like a large-flowered Snowdrop, will grow in almost any kind of soil, and is a charming plant on the rock garden or in the flower garden. The Crocus thrives in almost any soil or position and lends itself to almost any method of planting, as it is equally effective in the formal garden as when planted in a more natural manner in grass. The Squill is not exacting as regards soil and may be grown in small beds or as a carpet to beds of shrubs. It is also very effective for making marginal lines on the edges of shrubberies or informal hedges, where it can display its beauties without risk of injury. Amongst the bulbous Irises I. alata, which flowers in mid-winter, should be given a sheltered position. I. reticulata is one of the sweetest of all bulbous Irises and flourishes on well-drained soils, giving a beautiful display of its purple, fragrant flowers in early spring; its variety Krelagei is also well worth growing. I. Danfordiae, with its beautiful yellow flowers spotted brown, is particularly suitable for dry nooks in the rockery. Anemone apennina and A. blanda flourish on light soils in partial shade. All these bulbous plants should be planted as soon as possible to enable them to become well established before their flowering period.

Routine Work.—The flower garden will now be at its greatest beauty and every effort should be made to keep turf, paths and edgings in the neatest condition; faded flowers should be picked off promptly to encourage the continued growth and further flowering of the plants. Climbing plants should be attended to frequently to keep them neatly trained, and tall-growing herbaceous plants should be examined to make sure that they are securely tied.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough. Leicestershire.

Red . Currants.—So soon as the crop is gathered it is a good plan to thin the shoots where they are very numerous, and also to remove the tips of the remaining branches, to encourage them to plump up the buds for another season. When this summer pruning has been done apply a mulch of half-decayed manure over the roots to keep them moist and cool for the remainder of the summer. A copious syringing with an insecticide suitably diluted will cleanse the bushes, and also destroy any caterpillars on them. Suckers springing from the base of the bushes should be cut out.

Black Currants.—These bushes may be given similar treatment as regards thinning and pruning, with the exception that some of the old wood should be cut out, and young shoots from the base encouraged to grow. These bushes also will benefit by a mulching of manure.

Gooseberries. — The shoots . of Gooseberry bushes should be thinned where they are numerous, and the soft tips of the branches taken off, as it is on the soft wood where the Gooseberry mildew makes its first appearance. If this disease is detected, remove the affected branches and burn them, and afterwards syringe the bushes with a mildew specific, and sprinkle the ground underneath them with slaked lime. Timely attention is most important in regard to this disease, as if left unchecked, the spores drop to the ground and re-infect the bushes the next season.

Walnuts.—If the nuts are required for pickling, they should be gathered now, otherwise they will become "woody" and unfit for the purpose. The Walnut makes a very ornamental park tree, and a few specimens should be planted where there is room for them. A short avenue formed of Walnut trees is a pleasing feature in the garden.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charlel Nall-Cain, Brocket Hall, Hertfordshire.

The Early Vinery.—After early vines have been cleared of fruit they should be kept watered at the roots. Much depends on the treatment the vines receive after the bunches are all cut as to the next season's crop. The grower should endeavour to obtain good, ripened growth; to obtain this the vines should be fully exposed to the sun, and plenty of fresh air admitted to the vinery both night and day until such time as frost appears. During the ripening of the crop, when a drier atmosphere is necessary, red spider may spread, and if this pest is in evidence the vines should be syringed vigorously both morning and evening during hot, dry weather, using an insecticide occasionally to keep the pest well in check. While the vines are active in growth the roots may be fed liberally with liquid farmyard manure, or, failing this, a suitable vine manure. This feeding should help the vines considerably to form strong buds that will develop the shoots from which next season's crop will be taken.

Strawberries.—Where the runners have been layered, as advised in a previous calendar, they should now be ready for transference to the large pots in which they will be fruited. A suitable compost for the final potting consists of a fairly strong loam, well mixed with old mortar rubble, bone meal, broken charcoal and ash from the garden fire. The compost should be prepared several days before it is used, as it is necessary for it to be on the dry side to allow of firm potting. Use clean pots and see that they are adequately crocked, placing some of the rough portions of the compost over the crocks, with a dash of soot to deter worms from entering the pots and blocking the drainage. As soon as the runners commence to grow afresh they should be stood out of doors on a bed of ashes, arranging them where they may be easily examined for watering. Choose an open position, fully exposed to the sun. Keep the pots free from weeds, and pinch off all runners as they make their appearance. Careful attention to water-at all times is necessary, and overhead sprayings with a fine rose can is conducive to active growth.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Lachenalia.—The bulbs should be potted during this month and the earlier in the month the better. It would be unwise to allow them to make any appreciable growth in the pots in which they have been ripening. Turn the bulbs out of the old pots and select the larger ones for next season's flowering. Ten or twelve of these may be placed in a six-inch pot in a compost comprising good fibrous sandy loam and flaky leaf-mould in equal parts, with plenty of sharp sand added. The second size bulbs may be grown on in boxes or pans to form flowering bulbs another year. The newly-potted bulbs should be placed in a cold frame on an ash bottom. They should not, however, be covered with plunging material in the way that other pot bulbs are usually treated. They should remain in the cold frame until late autumn and then be grown in the lightest part of a cool greenhouse.

Pot Mignonette.—The present is a suitable time to sow seeds of Mignonette for flowering next winter. Pots of six inches diameter are the most suitable receptacles, and these should be well drained and three-parts filled with a compost consisting of three parts fibrous loam, not broken finely, but used in a lumpy condition; one part old hot-bed manure and one part leaf-mould, with a free addition of broken mortar-rubble and a little soot. The soil should be pressed firmly in the pots. The seed should be sown thinly, and be slightly covered with finely sifted, sandy soil. Water the seeds in lightly and place the pots in a cold frame. When the seedlings are large enough to handle they should be thinned to four or five of the stronger plants in each pot. From time to time light top-dressings of soil will be necessary. During winter the plants should be grown on a shelf near to the roof-glass in a quite cold house. To provide a batch for spring-flowering another sowing may be made in about four weeks time.

Hard-wooded Plants.—Greenhouse Rhododendrons, Azalea indica, and many other hard-wooded greenhouse plants may now, with advantage, be placed outside for a few weeks in order to assist the maturing of their growth. As a safeguard against injury from strong winds it is well to plunge the pots to their rims in a bed of coal ashes.

THE KITCHEN GARDEN.

By WALTER Y. STAWARD, Gardener to Mrs. JOHN FEENEY, The Moat, Berkswell, Warwickshire.

Late Peas.—Peas have grown rapidly since rain fell and late crops require attention in staking. Draw some of the fine soil up to the plants with a draw hoe before staking them. If plenty of short litter is available place a good mulching of this material between the lines. Hawfinches and Tits are very troublesome to Peas and late Peas may need to be netted against them. If plenty of frames are available, early dwarf varieties may still be sown, for with care in cultivation and especially in watering they will furnish pods late in the autumn.

Spring-sown Onions.—The bulbs of spring-sown Onions are swelling fast and all weeds should be carefully removed by hand. If the bulbs are too deep in the soil scrape some of the earth away from them to allow for expansion. Should the weather be dry copious waterings will be necessary to assist in the development of the bulbs, and applications of artificial manure weekly, watered in the soil, will be beneficial to the crop.

Autumn-sown Onions.—Autumn-sown Onions are ready for pulling, and they should be harvested on a dry day. If the weather is fine they may be left on the ground for the sun to ripen them, but if wet they should be placed in a dry, airy shed through which a free circulation of air passes. Any bulbs that are burst at the sides should not be stored but used for present consumption.

Salsify and Scorzonera.—If these crops have not been thinned this should be done forthwith to allow the plants plenty of room, thinning them 10 inches to 12 inches apart. When thinned a dressing of artificial manure hoed in the soil will be beneficial to the roots.

Late Sown Seeds.—Seedling Carrots, Beets, and Turnips should be thinned so soon as they are fit to handle and the soil between the lines hoed, for the finer the soil the better will the roots develop.

Shallots.—As the tops of this crop show signs of ripening the bulbs may be lifted. Ripening may be completed by laying them in a dry frame free from moisture. If kept the least damp, Shallots will make fresh roots and start growing again.

Runner Beans.—The stormy weather has displaced many of the shoots, which need attention in tying them in their original positions. Where plenty of liquid manure is available this stimulant may be applied to the roots with good results.

PLANTS NEW OR NOTEWORTHY.

ROSA BANKSIAE HYB. DI CASTELLO.

IN the *Gardeners' Chronicle*, January 5, 1878, page 22, was published a note by Dr. Fenzi of Florence, concerning three single-flowered (two white, one yellow) varieties of Rosa Banksiae, raised in 1868 by the late Paolo Baroni, curator of the Botanic Garden dei Simplici, Florence, from seeds harvested from a double-flowered variety of this species. Dr. Fenzi's note indicates that these varieties were bearing every year a certain quantity of fertile seeds.

Some twelve years ago through the kindness of the late Professor Baccarini, director of the Botanic Garden, I received two plants of these single varieties, one white, the other yellow coloured, and I planted them in my garden side by side. They are now covering a wall some metres high, facing east, and bear every year early in April a profusion of pretty, single, sweet-scented flowers, that are unfortunately ephemeral. But, strange to say, I have not been able to gather a fruit from these plants except after cross-fertilisation, which is strongly in contrast with the fertility noted above in the Botanic Garden of Florence.

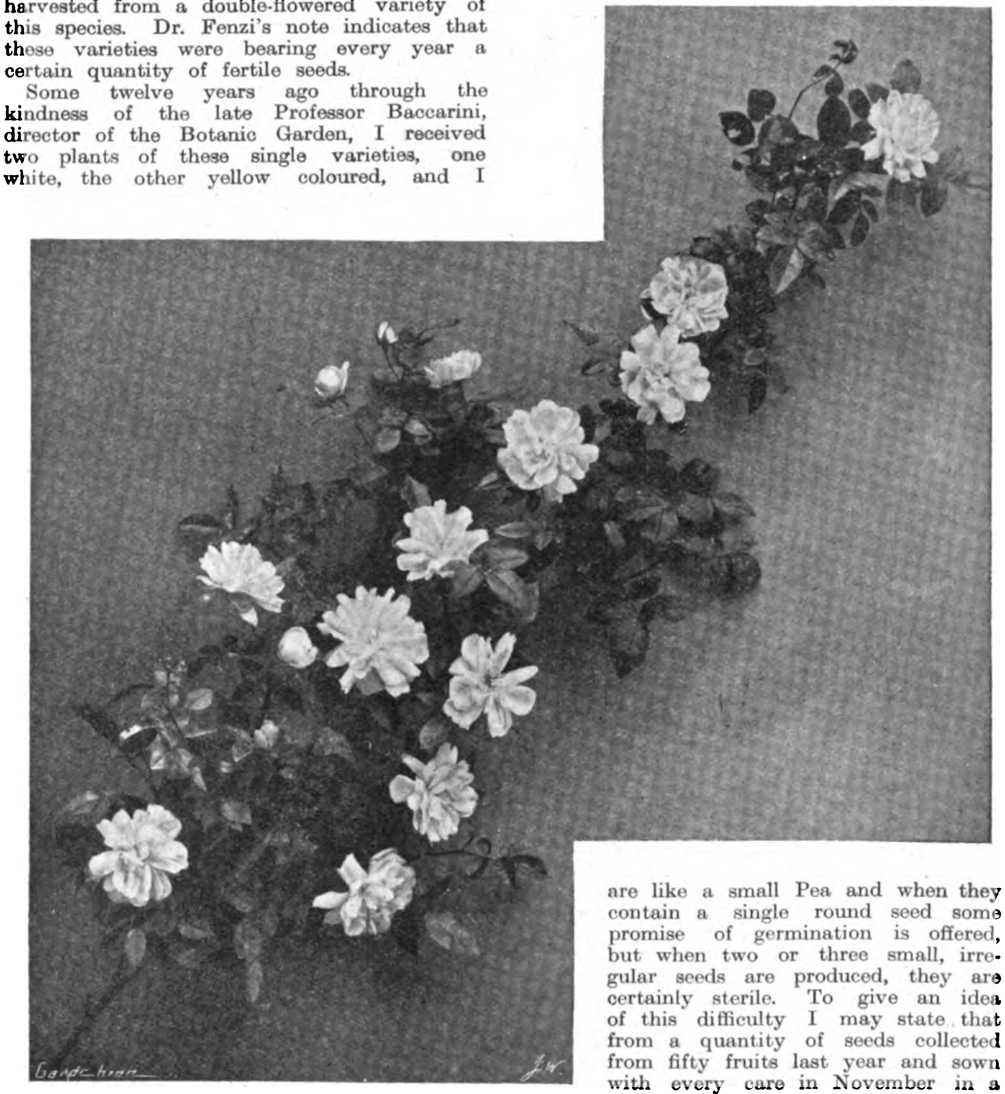


FIG. 26.—ROSA BANKSIAE HYB. DI CASTELLO (MUCH REDUCED).

For eight years I have made many attempts to cross-fertilise these single varieties, and I find that obtaining fertile seeds by this means is not an easy matter. Owing to the autosterility of both these varieties and the absence of any other species or variety of Roses blooming in my garden at the same time; the work of hybridation is very simple and consists only in the pollinisation of the stigmas without any preparation of the flower. As a consequence of the earliness of flowering it is a little difficult to procure pollen of other species and varieties, except from forced plants. For my experiments I have been able to make use of the pollen of the following species and varieties:—Rosa gigantea, R. bengalensis fl. roseo pleno, Fortune's Yellow, Lamarque, Candeur Lyonnais (H.P.), Climbing Caroline Testout (H.T.), Safrano (T.), Maréchal Niel (T.), Climbing Frau Karl Druschki (H.P.), Etoile de France (H. T.), Ulrich Brunner (H.P.), and a few others.

Cross-fertilised flowers rarely bear fruits and, more rarely, fertile seeds. The fruits are like a small Pea and when they contain a single round seed some promise of germination is offered, but when two or three small, irregular seeds are produced, they are certainly sterile. To give an idea of this difficulty I may state that from a quantity of seeds collected from fifty fruits last year and sown with every care in November in a greenhouse, only one plant has been produced; and I have only six plants representing the work of eight years. These are the results from the following crosses:—(1) R. Banksiae lutea simplex × R. Noisettiana Lamarque; (2) R. Banksiae alba simplex × R. bengalensis fl. roseo pl.; (3) R. Banksiae alba simplex × Fortune's Yellow; (4) R. Banksiae lutea simplex × Safrano. The parentage of the two remaining plants is not recorded.

The crosses between R. Banksiae alba and lutea simplex and R. gigantea bore fruits, but the seeds did not germinate.

I have given the name of Rosa Banksiae hyb. Di Castello to the only hybrid I have flowered, and this plant is the result of crossing of the simple R. Banksiae lutea with Lamarque. This hybrid has a robust constitution but is less vigorous than the mother, though more hardy. The branches, almost spineless, bear an abundance of double flowers of the purest white, about seven centimetres in diameter, sometimes singly, sometimes in clusters of three; they flower successively, are very fragrant and last some days in perfection.

The time of flowering is early in April at Castello. *Dr. Attilio Ragionieri, Castello, near Florence, Italy.*

ALPINE GARDEN.

CAMPANULA W. H. PAINE.

THIS variety of the garganica section has been sufficiently long in cultivation to have proved its worth, although it does not appear in many catalogues where one would expect to find it listed.

It is of very pleasing, trailing growth, like the others of the section to which it belongs, and has good-sized, deep violet flowers with a conspicuous white eye. I look upon it as one of the prettiest of dwarf trailing Campanulas. I am partial to C. garganica hirsuta, but the variety W. H. Paine is very different from that soft blue silvery Bell-flower, although both have the same open, flattish flowers. It is flowering well with me in half shade. *S. Arnott.*

SAXIFRAGA HUETIANA.

BARE places in the rock garden, sown with the seeds of this charming annual, are now bright with numerous star-like yellow flowers. Chance association with a white flowered Romanzoffia, with a remarkable similarity of growth enhances its quiet beauty.

Saxifraga Huetiana grows about six inches high and forms a round tuft of glabrous, fleshy, cool green, kidney-shaped foliage The solitary flowers, elegantly poised on long peduncles, are freely produced over a long period. *F.*

BULB GARDEN.

WHITE-FLOWERING TULIPS.

AGAIN a most interesting article on Tulips has appeared in *The Gardeners' Chronicle* (July 19) from *R.K.* This time he deals with white varieties. I wish he had not "sat on the gate" so much in his remarks about the early singles. One would like to have been told which, from his own personal experience, he judged the best. I gather it is Lady Boreel. Pelican and Diana I have never grown. I must do so. I thank *R.K.* very much. He has settled what is to be one of my little trials next year. It will be Early White Tulips under glass. Then I will know more. I used to pin my faith to Pottebakker White as a single, but *R.K.* puts it under "Double Early Tulips." I think this must be a slip. I have looked through many catalogues and have not found a double of that name. I wonder if he has ever grown alba regalis. Twenty to twenty-five years ago I used to grow it, and I would know it again anywhere from its delicious Orange perfume, but I almost think it must have "gone west," for I have not seen it offered for sale for a long time. It is not a pure white, as it has quaint orange flecks or irregular little spots more or less all over its petals. Personally I put Schoonoord at the top of the double whites, and Blanch Hâtive at about the bottom, on account of its weak stem. One can forgive this weakness to some extent in a single like White Swan, for a slight bending over adds to its gracefulness as a cut bloom, which is its true purpose in life, but not in a double.

White May-flowering Tulips are still scarce commodities. The old set—Dora, Innocence (? the best of them), Royal White, Niphetos, Dame Blanche &c., &c.—have been out-classed. Everyone who has seen Zwanenburg and Carrara must "say aye." These are great advances. I first saw Zwanenburg when there were only two or three bulbs of it in the world. It has black anthers, and sometimes a tiny speck of red is to be seen, but as a garden plant I put it before Carrara. I have had it for some time and I have never noticed the blue look that *R.K.* describes. Now I did notice this in Carrara last season, but I never thought of it as a detriment. Themis is an improved White Swan, but having grown it for the past two years, I do not think the improvement is sufficient to give it its present catalogue value. Albino and Vesta have not as yet found a home in my garden, nor have I seen them growing elsewhere so I can say nothing about them.

If La Reine and Parisian White come under the head of white-flowering, why not Brunhilde? *R.K.* must know it. I wonder if he agrees with me in thinking very highly of it when grown under glass, but not so much of it when seen in the open. Those broad yellow flames on the petals give it a distinction all its own, at least the only variety which, so far as I know, shares it, as the little Princess Ida, which, like alba regalis, seems to have disappeared, but I once thought it rather nice.

Writing about "died-outs" reminds me of a singularly beautiful little double Tulip; not a heavy-weight, but such a flower as I think would appeal to my friend Mr. Grove, of Lily fame, in its splendid smallness—Rose le Reine. It came to me from Mr. Bull of Ramsgate. I cannot say what colour it is for I have never as yet located it. No two people agree. It is some sort of a red, which is of a soft and pleasing shade, and there I must leave it. I think it still exists in Holland, but I fancy it is very nearly gone. May I live to propose a toast, "Rose la Reine redivivus.'

In conclusion may I say in reply to *R.K.*, on page 48, first that in a selection one cannot include everything and *personal* liking in all non-florists' Tulips must be the determining factor. I respect Inglescombe Yellow, but I love Moonlight. Secondly, that Arethusa may be had from its raiser, Mr. C. G. van Tubergen, of Haarlem.—*Joseph Jacob.*

SNOWDROPS.

I HAVE read *Formakin's* second contribution (*Gard. Chron.*, July 12, 1924, p. 27), with interest and amusement, but will not follow him in his sarcastic vein. That way hardly tends to knowledge, and had he, before writing it, received the box of Snowdrop capsules (var. nivalis) which our Editor kindly forwarded to him, I think he would not have penned the second article as he did. He complains that I should have taken him as stating "Snowdrops only increase by offsets—never by seed"; that he was only writing of his own observation. I regret the misquotation. In writing my note I was trying to get at truth.

The capsules forwarded to *Formakin* were all from one large clump growing among Ivy under a Beech tree, as I stated—not a Lime! *Formakin's* observations are again—I will not say at fault—but not extensive enough. He could see many Beech trees here which form such a canopy, that little or no growth is found below them, while others carry their branches higher. Ivy and even Grass is common beneath these latter, and it was below such a Beech, measuring twenty-one inches quarter girth at five feet up, that the Ivy I described, and the Snowdrop capsules which were sent, grew.

The various replies which his first article have elicited have proved most interesting and instructive and show that no one man knows all about Snowdrops.

The capsules sent answer his point as to whether I took the trouble to open them and examine the contents (for good seed); I did not, and he has no doubt satisfied himself ere this regarding his further question as to number, colour, and size of the seeds in a capsule. In his personal acknowledgment of them he writes: "they seem well ripened." He may accept the statements as quite accurate that seedlings may be found around the parent clumps, where he thinks they should naturally be, also that small bulbs from the centre of the clump and growing nearer the surface than the parent bulbs were seedlings—not "weaklings," forced by the stronger bulbs to the surface. Many clumps here had a spread of about twelve inches, so that one can readily understand that some of the seventy to eighty capsules formed on such a clump may shed their seeds within it.

Formakin has pictured an ideal Snowdrop scene which is quite convincing. I would like to know where Galanthus plicatus may be seen producing leaves two inches broad! As for twelve inches long, Sir Herbert Maxwell mentions (*Gard. Chron.*, March 1, 1924, p. 119) having G. nivalis that height and my nivalis growing in the Ivy bank were the same height.

The fact of bulbs being found at various depths opens up an interesting subject. Trying to lift some seedlings of Anemone blanda I found the roots at a much greater depth than I expected. I then sowed some seeds of it, just covering the seeds with soil. When examined in the second year some of the tubers were two-and-half inches down. *T. Murray Thomson, Hereford.*

HORTICULTURE AT THE BRITISH EMPIRE EXHIBITION.

ANNUALS.

ANNUALS are exhibited by Messrs. Watkins and Simpson in a garden attached to their pavilion, the whole being one of the most pleasing exhibits in the horticultural section. The pavilion has a loggia and in the spaces between the stone columns are large boxes filled with blue Hydrangeas, Ivy-leaved Pelargoniums and Asparagus Sprengeri with just a touch of gold from Chrysanthemum segetum. In front of the boxes are some very pretty Japanese Maples with a carpeting of Asparagus Sprengeri.

The garden attached to the pavilion is laid out in a formal manner with numerous beds forming a pleasing design. The main approach to the pavilion has, on either side, three beds, the central one of which is of circular shape and planted with Salvia splendens Harbinger and edged with Veronica Andersonii variegata. The other two beds are furnished, the one with tuberous-rooted Begonias edged with Lobelia Blue Eyes alternated with Pyrethrum Golden Moss, and the other with Blue Gem Nemesia with a similar edging. To the right and left of these respectively the design consists of five beds, a central circular one and four others, bisected with broad paths. The centre bed contains Antirrhinum Flame, a beautiful orange variety with an edging of Lobelia and Pyrethrum set alternately. The other beds are filled with Antirrhinum Enchantress, pink; Gloria, deep pink; Black Prince, dark crimson; and Golden Monarch. The borders all round the garden are filled with beautiful flowers raised from seed and many of them are novelties of the firm. The most striking are Phlox nanum var. Rose Cardinal, salmon-pink; Godetia carminea fl. pl.; Salvia Harbinger (new); Calendula Orange King; Antirrhinum Feltham Beauty, pale pink; Verbena Royal Bouquet; Brachycome iberidifolia Summer Beauty; Stock Queen of the Belgians, mauve; Gilia coronopifolia, which supplies a very fine patch of scarlet; Viscaria Rosy Gem; Gaillardia grandiflora; Scabiosa Columbaria, which is a deeper shade than S. caucasia; Nemesia Orange Prince; Calliopsis Beauty, a fine clear gold with a big Chestnut-red zone; Petunia grandiflora, Excelsa strain; Mignon Dahlias, including Coltness Gem, which is said to come true from seed; Nicotiana Crimson King; Lavatera splendens; and Linaria maroccana excelsa. These are but a few of the many beautiful flowers in this interesting little garden, which, as stated, is one of the brightest and daintiest in the exhibition.

NOTICES OF BOOKS.

Rice.

Of the two cereals, Rice and Wheat, which together form the principal food of the world's human population, Rice is probably the more important and is the larger crop. Rice has been cultivated from time immemorial and was probably the chief food amongst the earliest of settled peoples. There is linguistic evidence that Rice-culture first began in south-eastern Asia, as in many of the languages of this region the terms for agriculture and Rice-culture, and for food and Rice, are the same, which indicates that Rice played an important part in the daily life of the peoples of this area in remote times, when their languages were being formed. An extensive and scattered literature has grown up on many aspects of Rice, but hitherto it has not been the subject of book treatment in any western language. To remedy this a book on the subject* has been prepared by Prof. Copeland and this was recently issued from the press.

In the preparation of his book Prof. Copeland has kept in view two main principals; firstly, the scientific aspect which treats of the Rice plant as a living thing and attempts to show how and why it reacts to treatment and environment; and secondly, the business or economic aspect of Rice cultivation and production.

The book opens with an account of the botany of Rice in which details are given of the characteristic features of the Rice-plant, and this is followed by a statement of its requirements as regards climate, soil and water. All plants require water in a varying degree for their existence, but Rice is alone amongst the great world crops in requiring standing water in which to grow. A certain number of varieties, known as upland Rices, are grown with the natural rainfall like ordinary cereals, but these are only of local importance and the grain they yield does not enter into general commerce. The great bulk of commercial Rice is produced by lowland or swamp Rices which grow in standing water. Given a tropical climate, water is the essential element in Rice cultivation, and where the natural rainfall is insufficient, artificial irrigation is required. As a matter of fact artificial irrigation is preferred as the grower then has control of the water supply and is to a large extent independent of rainfall. A sufficiently large natural supply of water for the production of lowland Rice involves a heavy rainfall and much cloudy weather, and as Rice is a light-loving species, this is detrimental to the crop. In most cases, therefore, where Rice-culture is practised on a large scale water is supplied by artificial means. Although the character of the soil is less important than the water supply, heavy soils consisting of fine particles are the most suitable, as these not only retain the irrigation water, but they provide the right medium for the finely divided root system of the plant, which differs from cereals generally, in being devoid of root-hairs.

In common with most cultivated crops Rice is subject to a number of diseases and pests and these present rather a formidable list as given in Prof. Copeland's book, but many are only of local importance, and it is gratifying to learn that there is no recorded instance of Rice cultivation having been stopped as an industry, in any country, on account of diseases or pests. Lack of water on the other hand is said to be responsible for more injury than all the diseases and pests combined.

A most interesting part of Prof Copeland's book is devoted to seeds and varieties of Rice, and this should be read not only by Rice-growers but by plant cultivators and plant breeders generally, as these can hardly fail to find it of great interest and probably of profit to themselves. The varieties of Rice in cultivation are extremely numerous and variable, and those who grow the crop for their own use recognise various qualities such as colour, flavour and cooking, which are not obvious to the uninitiated, and this explains why so many varieties of no commercial merit are grown. The need for accurate knowledge of all the existing varieties before improved races can be evolved is emphasised, and to this end an "outline of description" for use in describing varieties of Rice is provided. If this outline were used in future descriptions, it would be possible to recognise and identify local varieties with an assurance that has not hitherto been possible. The need for some definite scheme for descriptions will be realised when it is considered that Java, Indo-China and Japan are estimated to have over 1,000 varieties each; the Philippines some 3,500 varieties, and India about 8,000 varieties; whilst the number in China cannot even be estimated.

There is thus a wealth of material at hand for the breeder, but before it can be used intelligently it must be known and classified, hence the need for systematic descriptions such as are proposed in the "outline" already referred to.

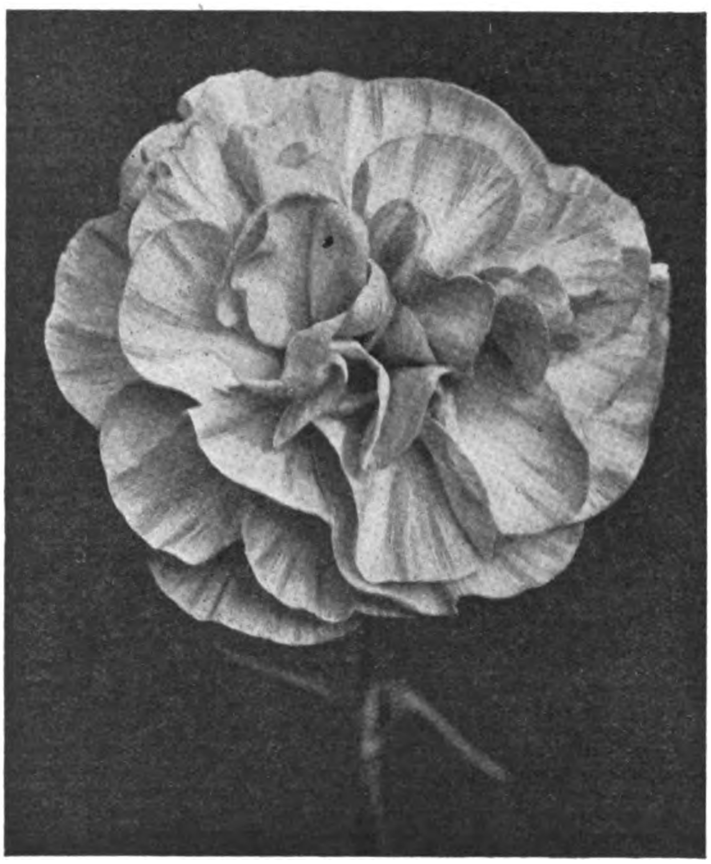


FIG. 27.—CARNATION MYRTLE PETTIGREW (see p. 86).

In many Rice-growing countries improvements in Rice crops have resulted from selection along pure lines. Hybridisation has been tried with good results in Java, but the hybridisation of Rice is a delicate operation as not only are the flowers small but the pollen is shed at or before the time of opening, and it is therefore necessary to emasculate the flower at an early stage if self-pollination is to be prevented.

Although Rice is dealt with as a world crop by Prof. Copeland, Rice culture in the United States and in the Philippines receives most attention, these being two Rice-growing countries with which he is best acquainted. It is fortunate, therefore, that these represent two distinct methods of cultivation. In the United States human labour is reduced to a minimum and machinery is employed wherever possible both for the preparation and cultivation of the soil and the harvesting of the crop. In the Philippines on the other hand human labour predominates, and only primitive implements drawn by the water buffalo are employed for cultivating the soil; similar methods of Rice culture are characteristic of most oriental countries. Some idea of the labour involved in preparing mountain sides for Rice may be gathered from the wonderful picture of the Rice terraces in the mountains of Luzon, which forms the frontispiece.

The book concludes with a brief account of the uses of Rice, and the commercial and social considerations of Rice production. In view of the importance of Rice as a food for large numbers of people in various parts of the world, and as an article of international commerce, this study of the subject by Prof. Copeland is particularly welcomed. It is to be hoped that it will stimulate a more systematic record of the numerous varieties that still await investigation, which is a necessary step in making Rice culture more effective. "There is," as the author remarks, "no other field in which well expended effort will add as much to human good and health as it will if applied to the improvement of Rice culture." *H. S.*

---

* *Rice*, by Edwin Bingham Copeland, Professor of Plant Physiology and Dean of the College of Agriculture, retired, University of the Philippines. Pp. xiv + 352, illust. London: Macmillan and Co., Ltd., 1924. Price. 20s net.

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

Cultivators will soon be watching for the appearance of certain flower buds at the point of the growths, for the taking of the correct bud makes all the difference between large blooms and small ones: I ought to add comparatively, because some varieties in any case provide larger flowers than do others. Crown buds are of importance to the grower who requires highly-developed examples for show or for supplying high-class cut blooms.

Perhaps it will be well to distinguish a crown from another bud. The former is always surrounded by leaf-growths; it comes before the last, or final bud which is accompanied by a cluster of others, and thus a spray of blossom is developed on a stem or branch. As August approaches an observant cultivator is on the watch for this crown bud, knowing that unless it be obtained so as to give a branch time to perfect and mature the blossom from it, there is little chance of obtaining either the topmost position in competition, or the best prices in the markets.

Some few sorts need to have the tips of the stems taken away in early spring so as to get this desirable flower-bud as early as August; the majority, however, give little trouble in this respect, and many indeed come before that time. In such cases the grower must take some risk, whether it will be better or not to secure these buds. For purposes of exhibition in the usual time of early November, the wisest course would be, generally, to take that risk on the early-formed buds. Retaining the flower buds simply means the removal of surrounding growths, and this is best done while the latter are small.

There can only be one crown bud on each stem; how many, or how few blooms a plant shall be allowed to carry rests, then, entirely upon the number of branches chosen. A cultivator for exhibition may reduce the number to one, two, or three in the case of the Japanese kinds: a market producer from six to a dozen.

Single Chrysanthemums do not require such concentration, although in their case thinning of some sort must take place to bring out the highest capabilities of the flowers. A grower of spray blossom does not thin; still, even in this case, improvement may result if the centre flower bud of each cluster be removed. This action will give the rest of the buds a better chance to push out, and open in proper character, thus enhancing the beauty of the spray. Referring to taking away the tips of the growing stems, termed stopping, the good obtained by such practice may easily be exaggerated; indeed with very few exceptions it is a hindrance to getting the best out of a plant. In my opinion a far better method in dealing with the few varieties that are unusually late in producing a crown bud is to root the cuttings late and allow one bloom to a plant—this, of course, for show purposes. There is nothing to prevent the grower from putting two, or more plants in one pot; at any rate growth is carried on without a check. Once take away the point and something is removed that cannot be replaced.

If growers care to take the trouble as I have often done, to watch a pair of plants of the same sort rooted at the same time, the one having the point of its stem taken away, the other not, it will be seen that subsequent progress is always in favour of the latter. During the time the one is forming a new leader, the other is growing away freely and gaining strength, while the period in which the crown bud comes does not differ materially in either case. To get the best out of bush plants, there should not be any stopping. At the moment plenty of the plants, the points of which have not been interfered with, are throwing out from a dozen to eighteen side branches along the stem. If good results could be obtained by any other method such would be well worth a trial. All that is required is ample room for development: allow plenty of light and air and each branch will extend and make a symmetrical whole. It may be necessary in reducing the number of branches, to commence thinning at the top: open out at the centre, in respect to a bush specimen, for the three or so buds at the point will take more than their due share of the sap, and these may develop out of proportion if retained. In this natural growth of the Chrysanthemum we get the whole secret of the giant bloom. *H. S., Woking.*

FIELD DAY AT THE RESEARCH STATION, LONG ASHTON.

This year for the first time the National Fruit and Cider Institute held a combined Annual Tasting and Field Day in mid-summer (July 15th), instead of holding these separately at the usual periods in May and September. The object of this was to give visitors an opportunity of inspecting the fruit plantations under summer conditions and the experimental work in progress therein at a different stage from that seen on previous occasions in spring and autumn.

In the cider house were displayed some fifty different ciders, the majority made from the Apple crop of last autumn and the remainder from that of the previous year. It was thus possible to compare the quality of the vintage of the two seasons in the case of certain varieties such as Kingston Black, Cap of Liberty, and Lambrook Pippin. The comparison was generally unfavourable to the later vintage.

The first subject to which attention was called in the fruit plantations was the manuring of fruit trees. An extensive series of experiments conducted upon fruit trees in pots showed in unmistakable manner the results which follow when the trees are starved of any one of the essential elements of food. The kinds of fruits being tested in these experiments are Apples, Black Currants, Gooseberries, Raspberries, and Strawberries. All plants agree generally in showing more or less complete stunting of growth when either nitrogen or phosphorous is lacking, leaf scorch where potassium is deficient, and relatively strong growth where calcium is withheld. Very significant differences in foliage character are produced from the respective deficiencies and it is of practical importance that these same characteristics of foliage are shown by trees growing in the open ground when the corresponding element of food is deficient. In this way it is often possible to detect in fruit plantations cases where trees are suffering from defects in nutrition and to deduce the appropriate manurial treatment required to restore them to proper health. In one of the plantations inspected, where Gooseberry bushes were being subjected to an elaborate manurial experiment, the effects of omitting potash in the manurial dressing applied were shown in a remarkable way, leaf scorch being severe and the growth of the plants being stunted in consequence. The same plantation showed also very clearly the importance of properly balanced manuring, since the plants which had received applications of all the essential foods except potash were markedly inferior even to those which had received no manure of any kind.

In a plantation adjoining the pot experiments an opportunity was provided of seeing and hearing something of the important investigations now in progress at the Research Station on the serious diseases of Reversion and Big Bud of Black Currants. The history of every bush in this plantation has been closely recorded and significant observations have been made as to the spread of these diseases and their relation to one another. Although final proof as to the real nature of the hitherto obscure reversion disease has not yet been secured, recent results tend strongly to point in a definite direction and a marked advance in the knowledge of this subject, which may have a very important bearing on methods of control and prevention, is not unlikely in the near future. It was satisfactory to learn that by using care in propagating from perfectly healthy stock and immediate destruction of infected plants when the first signs of the disease appear, growers are now able to cultivate this fruit with much greater chances of success than was posssible before the investigations had shown how the disease could be recognised in its earlier stages.

The plots allocated to experiments with Strawberries were inspected. Here were seen numbers of seedling varieties raised in the course of the fruit-breeding investigations. Some of these represented selections from the older seedling beds and included several kinds full of promise, and others raised more recently and still in the preliminary stages of trial. Of these latter a large proportion, as is usual in all plant breeding work, is of little value. An extensive trial of varieties including the latest introductions and some of the older, lesser known sorts, illustrated to the grower the importance of selecting kinds suited to his local conditions. Some varieties of high repute have proved to be comparative failures at Long Ashton, and others of smaller reputation have turned out to be superior under the conditions obtaining there. These trials are being conducted in conjunction with the Cheddar Valley Fruit Growers' Association.

Close attention is being given to the possibility of effecting improvement in the vitality and cropping capacity of individual varieties, the Royal Sovereign variety having been selected as the type for this line of work. The importance of this subject need not be enlarged upon since it is generally accepted that varieties of plants which are propagated exclusively by vegetative means—and these include all the commonly-grown fruits—tend in time to lose vigour and to deteriorate. The problem is being attacked in a variety of ways, among which are treatment of the parent plant and the selection from vigorous parents of the strongest runners only from the best strains. One plot where careful selection had been exercised already showed a great increase in vigour as compared with that of others planted with runners taken either promiscuously from mixed parents or deliberately from weak parents. All the cultural experiments on Strawberries are, however, being affected by the prevalence of disease which causes premature stunting and sometimes death of many of the plants. An investigation of the cause is in progress. To some extent the trouble may be attributed to eelworm attack, which produces a variety of symptoms, including the "Cauliflower" and some of the "red plant" forms, as proved by investigations last year at the Station. There appears to be another still unknown cause or causes also at work, resulting in root rot.

Another line of work to which attention was called is that on Apple rootstocks. For ten years members of the Long Ashton staff have been engaged upon the examination, classification, and selection of the so-called "free" and "crab" stocks of Apples, these being seedlings upon which the cultivated sorts of Apples are grafted or budded for propagation when strong-growing trees are required. During the same period the East Malling Fruit Research Station has been occupied on similar lines with the dwarfing or so-called "Paradise" types of Apple stocks, which are invariably propagated vegetatively. As a result of the work of the two Stations it has been demonstrated that there are no essential differences between these classes and that the seedling forms can also be reproduced vegetatively. Similarly the old ideas as to differences in vigour have been disproved, for forms of all degrees of strength ranging from very free growers to extreme dwarfing types are to be found in both classes. It has thus been possible to select a series of types of different degrees of vigour, and these have now been multiplied on a sufficiently large scale to permit of extensive trials being organised to test to what extent the vigour of the root-stock is reflected in the growth of the scion worked upon it and in what way the cropping quality and health of the resultant trees are affected. In one of the plantations at Long Ashton there were to be seen trees of Bramley's Seedling, Worcester Pearmain, and Lane's Prince Albert Apples, each worked on some dozen forms of Paradise stocks selected at East Malling. Differences in size due to stock influence could be seen readily in some cases, particularly in that of trees worked on the Malling Type IX (Jaune de Metz Paradise), although visitors were informed that the differences were generally not so marked as in corresponding trials at East Malling, an interesting case of variation in results caused by local conditions.

The holding of the Field Day at this time of year permitted visitors to see most of the seedlings of Currants, Gooseberries, and Raspberries, which have been bred at the Research Station, in fruit. One specially promising new seedling Gooseberry was pointed out, carrying an unusually heavy crop of berries of the first quality. Among the numerous plots devoted entirely to new seedlings was one, an acre in extent, filled with Apples and Black Currants. Many of the latter are highly promising, and among them are some of which more may be heard after further trial.

Since the Field Day last autumn several new plantations have been established. These are being devoted mainly to manurial experiments with Strawberries, pruning experiments with Apples and spraying trials.

During the course of the tour through the plantations many other experiments in progress were pointed out.

IMPERIAL BOTANICAL CONFERENCE.

(*Continued from p.* 64.)

Before reasons of crop yield can be understood and controlled accurate quantitative knowledge of the course of the crop-plant's development in building up the final yield is necessary. The author in investigating the Cotton plant in Egypt obtained full quantitative records at very short periods throughout the season. By plotting the results as a series of "plant development curves," it was possible to obtain an accurate conception of the "average plant" of a growing crop; precise developmental records of the effect of spacing, manure, and other conditions that effect the final yield; and an early forecast of the effect of the final yield from the curves of the vegetable stages. Such analytical curves are much more valuable than a single integrated curve of final yield.

The third section dealt with "The Quantitative Relations of Factors and Yield." No plant can develop except in the presence of innumerable "factors" the magnitudes of which are capable of affecting its rate of development and also its ultimate yield. As a crude analysis these factors may be distinguished with those which concern the supply of materials of growth and those that concern the conditions of growth. Some factors, conspicuously light, act in both categories.

A line along which investigation has been pushed is to endeavour, with a series of cultures, to keep all factors but one constant and then to compare the effect on growth and yield within the series of varying the one selected factor over a wide range. Data from single mineral constituents of the soil of pot cultures have been accumulated and similar experiments with varying areas of natural soil for each plant to draw upon for field cultures. We are faced with the problem of relating the grades of increasing yield with the grades of increasing factor in such series of experiments on some empirical or rational basis. Various authors have attempted to formulate "laws" which govern universally the relation between plant yield of any type and the magnitude or intensity of every outside factor, be it a mineral constituent of the soil, light, or water supply.

Mr. G. E. Briggs considered some of these attempts in a paper on "Plant Yield and Intensity of External Factors; Mitscherlich's 'Wirkungsgesetz.'" A consideration of the flexibility of Mitscherlich's equation in application, and of the available data shows that his claims are scarcely justified. Owing to uncertainty as to the depth of soil available in field cultures it is impossible to utilise data from pot cultures for forcasting the effect of manure in field cultures with the same soil.

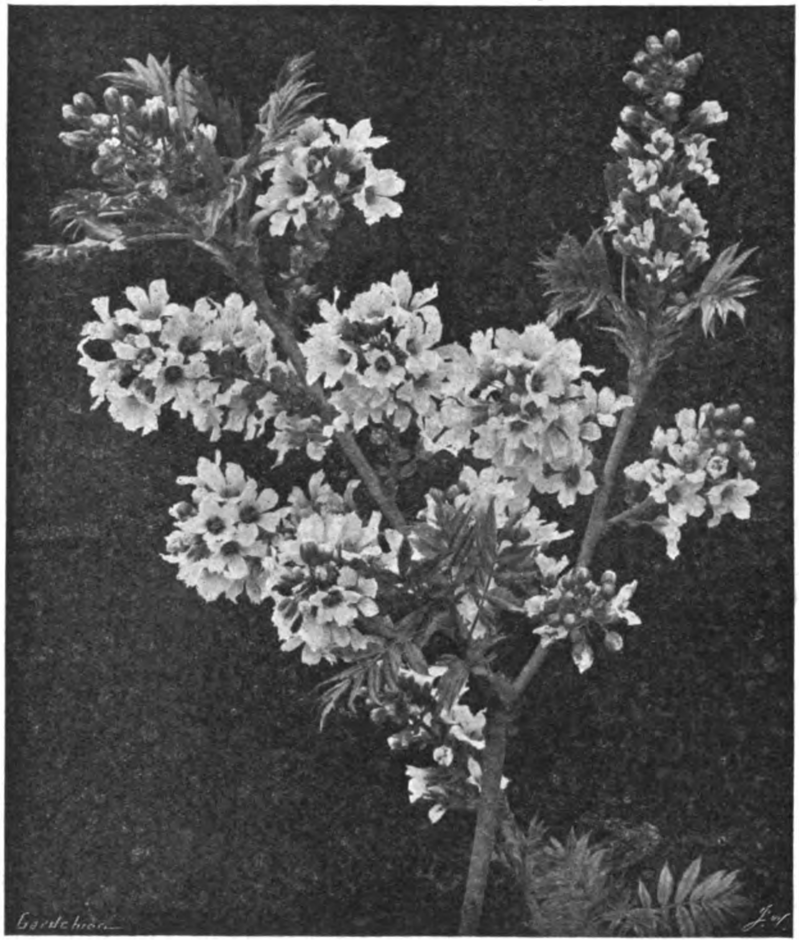


FIG. 28.—FLOWERING SPRAY OF XANTHOCERAS SORBIFOLIA.

(see p. 78).

The fourth section dealt with "The Complexity of the Plants' Spatial Environment—Soil." Economic reasons demand that each crop shall be grown on many natural soils and not on an ideal standardised soil artificially prepared. The complexity of natural soil is enormous. We know it is a microcosm in itself with its own internal fauna and flora as well as wide variations in chemical nature and physical properties. The addition of one and the same given amount of fertiliser to two different type of soil may produce quite different reactions, directly or indirectly, when the exquilibrium of the micrososm is thus disturbed. To establish whether or not small margins of favourable effect do actually occur for a given crop by shifting the attained equilibrium of the soil towards some new equilibrium, requires extreme critical care in experiment. All the experiments must be adjacent and simultaneous as no weather sequence during development is ever repeated exactly. Everything turns on the critical use of control plots of soil as standards. There has grown up a whole series of investigations aimed at securing the most trustworthy method of experiment in this field. Mr. E. J. Maskell gave an account of the methods of central plot-culture from the point of view of experimental work at Rothamsted. The dominating problem in plot culture experiments is the elimination of the influence of soil heterogeneity.

The final section dealt with "The Complicity of the Plants' Temporal Environment—Season." Natural atmospheric conditions and weather lack even the element of stability that the soil possesses. Definitive studies of crop yield must range over a series of years and cannot escape the action of this immensely variable set of factors. The components of weather have a considerable independence so that the task of disentangling the effects of duration of sunshine, mean temperature, humidity, rainfall and air movement is one of great difficulty. Given a sufficient mass of data and adequate records of the components of weather we can add to the experimental method the methods of statistical analysis. At Rothamsted crops have been grown and weather recorded for the same plots for many years in succession. Dr. R. A. Fisher showed how significant relations between weather factors and yield can be computed by modern statistical methods from data of this type.

(*To be continued*).

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

XANTHOCERAS SORBIFOLIA, BUNGE.

When seen at its best few shrubby plants are more beautiful than Xanthoceras sorbifolia, laden with its exquisite heads of flowers, the crimson eye contrasting most beautifully with the white of the petals. The flowers are about one inch to one-and-a-half inch across, with short pedicels and are produced freely during May (Fig. 28) in erect racemes eight inches to ten inches long. They are borne on the wood of the previous year's growth, at the time the young leaves are developing; the five spreading and recurved, obovate petals, which are twice as long as the sepals, are white for nearly half their length and have yellow streaks at the base in the bud stage, which turn to red as the flowers open. Alternating with the petals are five cylindric, sub-erect, obtuse horns that curve outwards and are of a bright yellow colour, from which the plant derives its generic name.

The flowers are unisexual, and in the terminal raceme—generally the largest—are all pistillate, with short abortive stamens, the lateral racemes being staminate, with occasionally a few pistillate flowers appearing; the male flowers open slightly in advance of the female flowers.

The fruit is a globose, or somewhat Pear-shaped capsule, two inches across at the top, tapering to the base, three-valved, splitting when ripe and releasing the purple-brown, small, Horse-Chestnut-like seeds, which are almost as large as a Hazel nut, and edible.

The beautiful, pinnate leaves, which somewhat resemble those of some members of the Pyrus family, such as P. Sorbus, or the Mountain Ash (P. aucuparia), or perhaps more so Spiraea Lindleyana, are from eight inches to twelve inches long, dark green and glossy above, consisting of from nine to fifteen leaflets, which are sessile, lanceolate and coarsely serrate, one-and-a-half inch to two-and-a-half inches long, and confined to the upper two-thirds of the leaf stalk.

Closely allied to the Horse Chestnut, and Kōelreuteria, this handsome member of the Sapindaceae is a native of North China. It was first discovered in the Amor River district, nearly a century ago by the late Dr. Bunge, one time Professor of Botany at Dorpat, and again in 1886 by the Abbé David in Mongolia; in 1868 it was introduced into Europe, being brought to the Paris Museum by M. Pichou, a young Frenchman probably sent by the Abbé David, and it flowered in the Jardin des Plantes, Paris, in 1872.

Although usually regarded as a shrub or small tree up to 20 feet high, the plant here at Cambridge is a remarkably fine specimen, being 30 feet high (Fig. 29), an unusual height for this tree to attain in Great Britain, and perhaps even in its native country. The stem at one foot from the ground is two feet five inches in circumference. This tree flowers freely most years, occasionally ripening seeds, and seedlings sometimes appear around the parent plant.

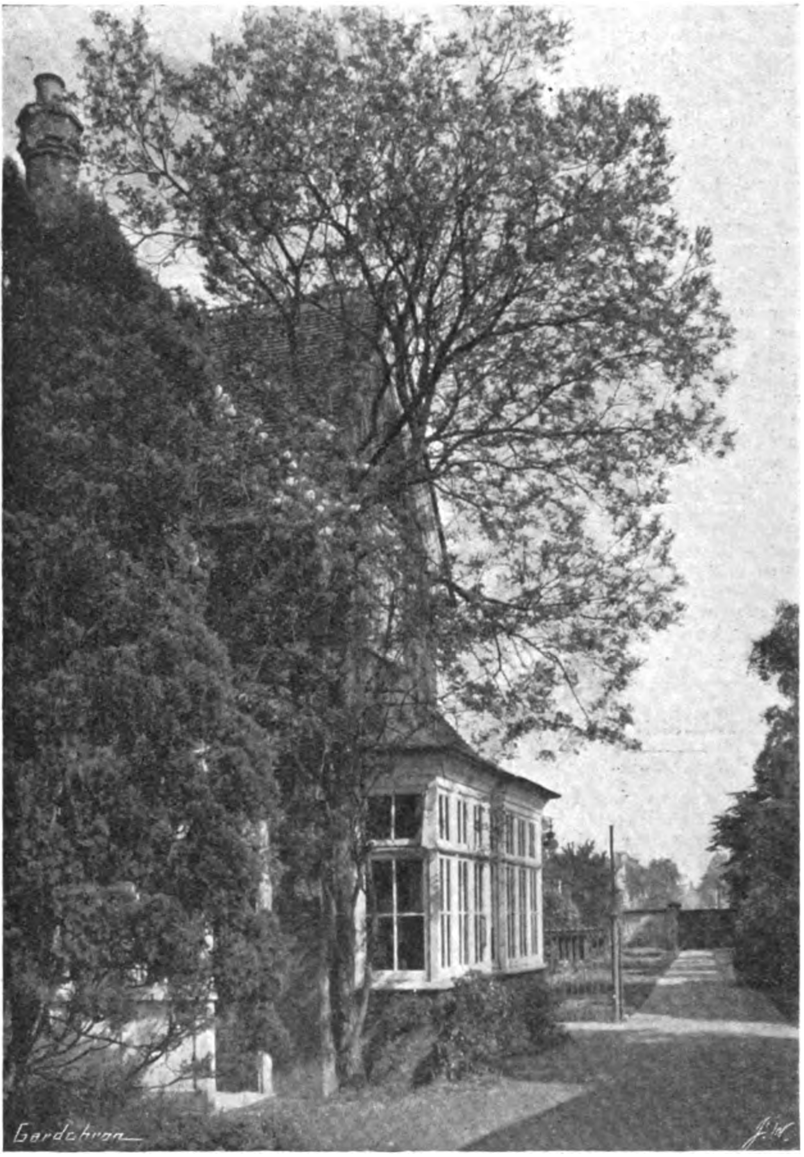


FIG. 29.—XANTHOCERAS SORBIFOLIA IN THE CAMBRIDGE BOTANIC GARDENS

Apart from increase by seeds, Xanthoceras sorbifolia may be raised from root cuttings placed in gentle heat in April; and, being a free bloomer in a young state, it makes an excellent plant for forcing when so raised.

A lover of hot sunshine and summer drought this Xanthoceras should not be planted in a moist, shaded position, and although it appears perfectly hardy it undoubtedly benefits by the protection of a wall, as the specimen illustrated indicates. It is an excellent plant for calcareous soils, and those who fail to get it to flower freely may find it respond to a liberal addition of lime rubble in the rooting medium. *F. G. Preston, Botanic Gardens, Cambridge.*

TREES AND SHRUBS.

LEYCESTERIA FORMOSA.

This shrub is one of the most useful and accommodating of plants, for it will grow in sun or shade, and succeeds either in good or poor soils. The slightly arched, hollow, cane-like branches grow to a height of about eight feet; they are glaucous green until several years old. The leafage is fresh and elegant, and the broad, wine-coloured bracts which support each tier of blossoms in the drooping inflorescences are remarkably effective. The flowers are tubular and white, often stained with purple, and they are followed by large dark red fruits. Although L. formosa will grow and flower freely in shade, the bracts assume a brighter colour with more exposure and these, appearing about midsummer, will persist until the berries have fallen in late autumn. Birds are very fond of the fruits and the seeds germinate freely. We have a number of seedlings flourishing in the mortar of a stone wall. To be seen to full advantage L. formosa should be planted on a somewhat elevated position and near a path, so that its branches may droop over towards the latter. It is an ideal shrub for the woodland garden and is practically evergreen in mild districts. *J.*

REPORT ON THE CONDITION OF THE OUT-DOOR FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

THE WORDS "AVERAGE," "OVER," OR "UNDER," AS THE CASE MAY BE, INDICATE THE AMOUNT OF THE CROP; AND "GOOD," "VERY GOOD," OR "BAD," DENOTE THE QUALITY.

FULLER COMMENTS WILL BE GIVEN IN THE FOLLOWING NUMBERS. SEE ALSO LEADING ARTICLE ON PAGE 69.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND										
Scotland, N.										
MORAYSHIRE	Under; bad	Under; good	Under; bad	Under; bad	Average; good	Under; good	Average; very good	Average; good	....	John Machpherson, 4, Hawthorn Road, Elgin.
	Average	Average	Under	Under	....	....	Average	Average	....	James Jamieson, Easter Elchies, Craigellachie.
ROSS-SHIRE	Under	Under	Under	Under	....	....	Average	Average	....	John Melrose, Ardross Castle Gardens, Alness.
SUTHERLANDSHIRE ...	Over; good	Average; good	Average; good	Over; good	....	....	Over	Over	....	W. F. Game, Dunrobin, Gardens, Dunrobin, Golspie.
Scotland, S.E.										
BERWICKSHIRE..........	Average; very good	Average; good	Average; very good	Average; good	Average; good	Average; good	Average; very good	Average; good	....	W. Clayton, Milne Graden Gardens, Coldstream.
Scotland, E.										
ABERDEENSHIRE	Average	Average	Under	Under	....	....	Over	Over	....	Simon Campbell, Fyvie Castle Gardens, Fyvie.
	Average; good	Under; bad	Average; good	Average; good	....	....	Average; good	Average; good	....	James Grant, Rothienorman Gardens.
	Over; good	Average; good	Average; good	Over; good	Over; very good	Average; good	Under; good	Over; very good	....	John McKinnon, Haddo House Gardens.
BANFFSHIRE..................	Average; good	Under	Under	Average; good	....	....	Average; good	Over; good	....	George Edwards, Ballindalloch Castle Gardens.
CLACKMANNANSHIRE	Average	Average	Under	Average	Under	Under	Average	Over	Average	Alexr. Kirk, Consulting Gardener, Paton St., Alloa.
INVERNESS-SHIRE	Average	Average	Over	Average	Under; bad	....	Over	Average	....	E. Dredge, Achnacarry Castle Gardens, Spean Bridge.
FIFESHIRE.....................	Average	Under	Under	Average	Average	Under	Average	Average	....	Chas. Simpson, Wemyss Castle Gardens, East Wemyss.
	Average; good	Under	Under	Average	Average; good	Under	Average; good	Over; good	....	D. McLean, Raith Gardens, Kirkcaldy.
	Average; good	Under; good	Under; good	Average good	....	....	Over; very good	Average; very good	....	David Milne, Balbirnie Gardens, Markinch.
FORFARSHIRE...............	Average: good	Under	Under; good	Average: good	....	Under	Over; good	Average; good	....	Donald McInnes, Glamis Castle Gardens.
	Under; good	Under	Under: good	Under: good	....	Under	Average; good	Over; good	....	Robert Bell, Kinnaird Castle Gardens, Brechin.
	Average: good	Over: good	Under	Average; good	....	....	Under	Average; good	....	David Boyle, Tay Park Gardens, Broughty Ferry.
	Average; good	Under; good	Average; good	Under	....	....	Over; good	Average; good	....	J. P. Peffers, Panmure House Gardens, Carnoustie.
KINCARDINESHIRE.. ...	Under	Under	Under	Over.	Over	....	Average	Average	....	William Thomson, Ury House Gardens, Stonehaven.
MIDLOTHIAN........	Average	Average	Under	Over	....	....	Over	Over	....	W. Crighton, Morton Hall Gardens, Liberton.
PERTHSHIRE	Average; good	Average; good	Under; bad	Average; good	....	....	Over; good	Over; good	....	James Chisholm, Meikleour House Gardens, Meikleour.
	Under	Under	Under	Average: very good	....	Under	Over	Over; good	....	James Tunstall, Keir Gardens, Dunblane.
	Average	Average	Under	Under	Over	....	Over	Average;	....	Chas. Crighton, Jordanstone Gardens, Meigle.
	Under; bad	Average; good	Under; good	Average; good	Average; good	....	Average; good	Over; bad	....	Malcolm Macnaughton, Scone Palace Gardens.
	Average	Average	Under	Average	Over	Average	Over	Over	....	James McGregor, Rossie Priory Gardens, Inchture.
STIRLINGSHIRE...........	Under	Under	Under	Average; good	Under	Under	Over; good	Average; bad	Under	James D. Cunningham, Duntreath Castle, Blanefield.
Scotland, W.										
ARGYLLSHIRE..............	Under; bad	Under; bad	Under	Average	Under	....	Average; good	Under	....	D. S. Melville, Poltalloch Gardens, Kilmartin.
AYRSHIRE	Average: good	Average; good	Under: good	Over: very good	Average; good	Under; bad	Average: very good	Over; very good	Under: bad	D. Buchanan, Bargany Gardens, Dailly.
BUTESHIRE	Under; bad	Under; bad	Under; bad	Under; good	Average; good	....	Average; good	Under; bad	....	John J. Davidson, Ardencraig Gardens, Rothesay.
DUMBARTONSHIRE......	Average; good	Average; good	Under	Under	....	....	Average; good	Under	....	John Brown, Cairndhu Gardens, Helensburgh.
DUMFRIESSHIRE	Under; bad	Under	Average	....	....	....	Average; good	Over; good	....	James McDonald, Dryfeholme Gardens, Lockerbie.

CONDITION OF THE FRUIT CROPS—*(continued)*.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARIES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
ENGLAND										
England, N.E.										
DURHAM	Under	Under	....	Average	Under	....	Average; good	Average; good	....	Edward Tindale, Ravensworth Gardens, Gateshead.
	Average; good	Under; bad	Under; good	Average; very good	....	....	Over; very good	Over; very good	....	J. A. Woods, Beamish Park Gardens, Beamish, S.O.
NORTHUMBERLAND ...	Average; good	Under; good	Average; good	Average; good	....	Under; good	Average; very good	Average; very good	....	William McCombie, Newton Hall Gardens, Stocksfield-on-Tyne.
	Average; good	Over; good	Under; good	....	....	....	Over; very good	Average; good	Average; good	James Winder, Howden Dene Gardens, Corbridge-on-Tyne.
YORKSHIRE	Average	Under	Under	Under	....	....	Over	Over	....	E. Knowles, The Hogg Gardens, Mirfield.
	Average; good	Average; good	Under; good	Average; good	....	Under; good	Average; good	Average; good	....	Jas. E. Hathaway, Baldersby Park Gardens, Thirsk.
	Over; good	Under	Under	Under	....	....	Over; very good	Average; good	....	J. G. Wilson, New Millerdam, Wakefield.
England, E.										
CAMBRIDGESHIRE	Under; good	Under; good	Under; good	....	....	....	Over; very good	Over; very good	Average; good	Arthur Sewell, 32, Barton Road, Ely.
	Under; good	Over; good	Under; good	Over; very good	....	....	Over; very good	Over; very good	Average; good	T. Spooner, "Whitecroft," Meldreth, Royston.
ESSEX............................	Under; good	Average; good	Under	Average; good	Over; good	Average; good	Over; good	Average; good	....	Arthur Bullock, Copped Hall Gardens, Epping.
	Under; good	Average; good	Under; good	Average	Over; good	Under; good	Over; very good	Average; very good	Under	C. A. Heath, Hallingbury Place Gardens, Bishops Stortford.
	Under; good	Average; very good	Under; good	Average; good	Average; good	Under; good	Over; very good	Over; good	Under; good	C. Wakely, East Anglian Institute, Chelmsford.
HUNTINGDONSHIRE ...	Under	Average	Under	Average	Average	Under	Over	Over	Average	James Hewitt, Castle Gardens, Kimbolton.
	Under	Over	Under	Under	Average	Under	Over; very good	Over; very good	Average	A. V. Coombe, Ramsey Abbey Gardens.
LINCOLNSHIRE	Average; good	Average; good	Under; good	Average; good	Under	....	Under; good	Over; very good	Under; good	Thomas Cox, Hainton Hall Gardens.
	Average	Over	Under	Under	Average	Under;	Average; good	Average; good	....	F. J. Foster, Grimsthorpe Castle Gardens, Bourne.
	Average	Under	Under	Average	Average	Under	Over; good	Average; very good	....	J. F. Vinden, Harlaxton Manor Gardens, Grantham.
NORFOLK	Under; good	Average; good	Under; good	Under; good	Over; good	Under; bad	Average; good	Average; good	Average; good	C. G. Nichols, The Manor House Gardens, Gt. Ormesby, Gt. Yarmouth.
	Under; good	Over; very good	Average; good	Average; very good	....	Under; bad	Over; very good	Over; very good	Under	J. E. Fitt, Earlham Hall Gardens, Norwich.
	Average; good	Average; good	Average; good	Under	Average	....	Average; good	Average; good	Average	Isaiah Johnson, Catton House Gardens, Norwich.
SUFFOLK	Under; good	Over; very good	Under; bad	Average; very good	Over; very good	Average; good	Over; very good	Average; good	Average; good	A. K. Turner, Orwell Park Gardens, Nacton, Ipswich.
	Under; good	Average; good	Under; good	Under; good	Average; very good	....	Average; good	Under; good	....	Arthur E. Sales, Flixton Hall Gardens, Bungay.
	Average	Average	Under	Over	....	....	Over	Over	....	E. G. Creek, County Horticultural Instructor, Shire Hall, Bury St. Edmunds.
	Under; good	Over; very good	Under; good	Average	....	Under; good	Over; good	Over; good	....	H. Coster, Ickworth Gardens, Bury St. Edmunds.
Midland Counties.										
BEDFORDSHIRE	Under	Average; good	Under	Under	Average; good	Under	Over; very good	Average; good	Under	W. G. Warner, Chicksands Priory Gardens, Shefford.
	Average; good	Under; good	Under	Over; very good	....	....	Average; good	Average; very good	Average; good	Chas. Turner, Ampthill Park Gardens, Ampthill.
BUCKS.............................	Under; good	Under; good	Under; good	Over; good	Under; good	Under; good	Average; good	Average; good	Average; good	W. Hedley Warren, Sunnymead, London Road, Buckland, Aylesbury.
	Under; good	Average; good	Under	Average; good	Average; good;	Under	Average; good	Under	Under	James Wood, Didson Park Gardens, Bourne End.
	Average; good	Average; good	Under; bad	Average; good	Average; good	....	Average; good	Average; good	Average; good	William Brooks, Abbey Gardens, Great Missenden.
	Under	Under	Under	Under	Average	Under	Average	Average	Under	Philip Mann, Education Sub-Office, Aylesbury.

CONDITION OF THE FRUIT CROPS—*(continued.)*

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
BUCKS (Continued)	Under; very good	Over; good	Average; good	Over; good	Average; good	Average; good	Over; very good	Average; good	....	F. Reid, Dropmore Gardens, Maidenhead.
	Under; good	Average; good	Under; bad	Average; good	Average; good	....	Under; good	Under; bad	Under	Wm. Turnham, Greenlands, Gardens, Henley-on-Thames.
	Average; very good	Average; very good	Under; good	Over; good	....	....	Average; very good	Over; very good	....	G. F. Johnson, Waddesdon Gardens, nr. Aylesbury.
CHESHIRE	Average; good	Average; good	Average	Average	Under	Under	Average	Under	....	T. A. Summerfield, Alderley Park Gardens, Chelford.
	Average; good	Average; very good	Under; good	....	....	....	Under; good	Average; good	....	Alfred N. Jones, Marbury Hall Gardens, Northwich.
	Average	Under	Under	Over	Under	Under	Over	Over	Average	Philip Bolt, Manor House Gardens, Middlewich.
	Average; good	Under	Under	Average; good	Under	Under	Over; good	Average; good	Under; bad	Jas. Atkinson, Torkington Lodge Gardens, Hazel Grove, nr. Stockport.
DERBYSHIRE	Average	Under	Under	....	....	....	Average	Under	Under	E. Wilson, Hardwick Hall Gardens, Chesterfield.
	Average	Average	Under; good	Under; good	....	Average; good	Average; good	Average; very good	....	John Maxfield, Darley Abbey Gardens, Derby
	Over; good	Average; good	Under; bad	Average; good	....	Under; bad	Average; very good	Average; very good	....	J. Tully, Osmaston Manor Gardens, Ashbourne.
HERTFORDSHIRE	Under	Under	Under	Under	Average	....	Average; good	Average; good	Under	G. H. Hill, Caldecote Gardens, Bushey Heath, nr. Watford.
	Under; bad	Over; good	Average; good	Average	Over; very good	....	Over; very good	Average; good	Average; good	G. Austin, Shenley Hill Gardens, Shenley.
	Under; bad	Over; good	Average; good	Over; good	Average; good	Under; good	Over; good	Under; good	Average	Edwin Beckett, Aldenham House Gardens, Elstree.
	Average; very good	Average; good	Under; good	Over; very good	Average; good	....	Over; very good	Average; good	....	T. Pateman, Brocket Hall Gardens, Hatfield.
	Under; bad	Over; very good	Under; bad	Under; good	Over; very good	Average; good	Over; very good	Average; good	Average; good	A. J. Hartless, King's Walden Bury Gardens, Hitchin.
LEICESTERSHIRE	Under	Average	Under	Under	Average	....	Average	Under Average	....	W. Coe, Prestwold Hall Gardens, Loughborough.
	Under	Under	Under	Average	Average	Under	Average	Average	Under	F. Ibbotson, Rolleston Hall Gardens, Billesdon.
	Over; good	Average; very good	Under	Under; bad	Average; very good	Under	Average; very good	Average; very good	Under	A. H. Campin, Whetstone Pastures Gardens, Leicester.
	Average; good	Average; good	Under; good	Average; very good	Average good	....	Average; good	Average; good	Under; very good	Wm. Paterson, Swithland Hall Gardens, Loughborough.
NORTHAMPTONSHIRE	Under; bad	Average; good	Under; bad	Average; good	....	....	Average; good	Average; good	Average; bad	Alfred Child, Catesby House Gardens, nr. Daventry.
	Average; good	Average; very good	Under; bad	Over; good	Over; very good	Under; bad	Over; very good	Over; very good	Under	F. W. Gallop, Lilford Gardens, nr. Peterborough.
	Under; good	Average; good	....	Under; bad	Average; very good	Average; very good	Over; very good	Over; very good	Over; very good	Arthur R. Searle, Castle Ashby Gardens, Northampton.
NOTTINGHAMSHIRE	Over; good	Over; good	Under; good	Average; very good	....	Under	Over; very good	Average; very good	Average; good	William Rae Scott, Bunny Park Gardens, Bunny.
	Average	Average; very good	Under	Average	Average	....	Average; good	Average; good	Average	S. Barker, Clumber Gardens, Worksop.
OXFORDSHIRE	Under; good	Under; good	Under; good	Average; good	Average; very good	Under; bad	Average; very good	Average; very good	....	T. W. Whiting, Shotover Park Gardens, Wheatley.
	Under; good	Average; good	Under	Under	Average	Under	Over; good	Under	Average	Ben Campbell, Cornbury Park Gardens, Charlbury.
	Under; good	Average; good	Under; good	Average; good	Over; good	....	Average; good	Average; good	....	John A. Hall, Shiplake Court Gardens, Henley-on-Thames.
	Under	Average; very good	Under	Under	Average; good	Under	Over; very good	Under; good	Under	B. Elkington, Wardington Lodge Gardans, Banbury.
	Under; good	Under; good	Under; good	Under; good	Over; good	Under; bad	Over; very good	Over; very good	....	Victor R. S. Gammon, Eynsham Hall Gardens, Witney.
STAFFORDSHIRE	Under; good	Over; good	Average; good	Under; bad	....	....	Average; good	Under; bad	Under	J. W. Miskin, Woodseat Gardens, Rocester.
	Under	Average	Under	Average	Average	....	Average	Under	Under	John Bates, Meaford Gardens, Stone
	Average; good	Average; good	Average; good	Average; good	....	Under; bad	Average; very good	Over; very good	Under; bad	E. Bannerman, Blithfield Hall Gardens, Admaston.
	Average	Under	Under	Average	Under	Under	Average	Average	Under	Edwin Thomas Gilman, Hillside, Rugeley.
	Average; good	Average; good	Under; bad	Under; bad	Over; very good	....	Average good	Average; good	....	T. G. Cheney, Westmere Gardens, Shenstone, nr. Lichfield.
	Over; good	Average; good	Under	Under	Average; good	....	Over; very good	Average; very good	....	Herbert Cragg, Aldershaw Gardens, Lichfield.

CONDITION OF THE FRUIT CROPS—*(continued.)*

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
WARWICK	Average	Average	Under	Under	Average	....	Average	Over; very good	Over	Burton Gaiger, Wellsbourne House Gardens, Warwick.
	Under; good	Average; good	Under	Average; good	Average; good	....	Over; very good	Average; good	Under	Ben H. Martin, Moreton Paddox, Warwick.
	Under; good	Under; good	Under; very good	Average; bad	Under; good	Under; good	Over; good	Average; good	Over; good	H. Dunkin, 86, Emscote Road, Warwick.
	Average; good	Average; good.	Under; good	Under; good	Average; good	Under	Average; good	Over; very good	Under	N W. Priaulx, Allesley Hall Gardens, Allesley, near Coventry.
	Under; bad	Under; good	Under; bad	Average; good	Over; good	Average; good	Over; good	Over; good	Average	W. Harmon, Newnham Paddox Gardens, Rugby.
	Under; bad	Over; good	Under; good	Average; good	Under; bad	Under; bad	Average; good	Average; good	Average; good	Chas. Harding, Ragley Gardens, Alcester.
	Average; good	Average; good	Under; bad	Under; good	Average; very good	Average; good	Average; good	Average; very good	Under	H. F. Smale, Warwick Castle Gardens, Warwick.
England, S.										
BERKSHIRE	Average; good	Over; good	Under; good	Under; good	Under; good	Under	Average; good	Average; good	Average; good	A. B. Wadds, Engelfield Gardens, Reading.
	Under; good	Under; good	Under; bad	Over; good	Under; bad	Under; good	Over; very good	Over; good	Over; good	Henry Butcher, Wyld Court Gardens, Hampstead Norris.
	Average; good	Average; good	Under; good	Average; good	Average; good	Under; bad	Average; good	Average; good	Average; good	Geoffrey Cooper, Ranworth, Malvern Road, Furze Platt, Maidenhead.
	Under	Average	Under	Average	Average	Under	Average	Average; very good	Under	Thomas Wilson, Castle Gardens, Wallingford.
DORSETSHIRE....	Average; good	Over; good	Under; bad	Under	Average; good	Under	Average; good	Average; good	Average	Thos. Denny, Down House Gardens, Blandford.
	Average; good	Average; bad	Under; bad	Under; bad	Average; good	....	Average; good	Average; good	Average	W. E. Axford, St. Giles Gardens, Salisbury.
HAMPSHIRE	Over; good	Under	Under	Under; good	Under	....	Average; very good	Average; very good	....	George Ellwood, Swanmore Park Gardens, Bishops Waltham.
	Under; bad	Under	Under; bad	Under	Average	....	Average; good	Average	Average	F. Gooch, The Gardens, Bossington House, Houghton Stockbridge.
KENT	Under	Under	Under	Average	....	....	Average	Average	Under	Geo. Lockyer, Mereworth Gardens, Maidstone.
	Under	Average	Under	Over; very good	....	....	Over; good	Average	Under	Edward A. Bunyard, The Bungalow, Allington, Maidstone.
	Under	Average	Under	Average	Average	....	Average	Over	Average	J. D. Colledge, Cobham Hall Gardens, Cobham.
	Under; bad	Under; bad	Under	Average; good	Under; good	....	Average; good	Average; good	Under	J. George Woodward, Barham Court Gardens, Maidstone.
	Under	Average	Over	....	....	....	Over	Over	....	Chas. E. Shea, The Elms, Foots Cray.
	Average	Average	Under	Over	Average	Average	Average	Average	....	J. T. Shann, Betteshanger Park Gardens, Eastry, Deal.
	Under; good	Average; good	Under	Over; good	Average; good	Under	Over; good	Over; good	Average	J. G. Weston, 30, North Street, Ashford.
MIDDLESEX	Under	Over	Under	Average	Over	....	Average	Average	Under	H. Markham, Wrotham Park Gardens, Barnet.
	Under; good	Under; good	Under; good	Under	....	....	Average; very good	Average very good	....	James A. Palce, Sunnyfield, Gardens, Mill Hill.
	Average; good	Average; good	Average; good	Average; good	....	Under	Over; good	Under; bad	....	G. H. Head, Fulwell Park Gardens, Twickenham.
SURREY...........................	Average; good	Over; good	Under; very good	Over; bad	Average; good	....	Over; very good	Under; very good	Average; very good	James T. Weston, Upper Court Gardens, Esher.
	Over; very good	Under; very good	Under; good	Over; very good	Average; good	....	Over; very good	Under; good	....	Will Tayler, Peace, Ashtead Lane, Godalming.
	Under; bad	Over	Under	Average	Average	Under	Average	Average; good	Over	J. Collier, Gatton Park Gardens, Reigate.
	Under	Average; good	Under	Average; good	Over; good	Under	Average; good	Under; bad	Average; very good	F. Jordan, Ford Manor Gardens, Lingfield.
	Under; good	Over; good	Under; good	Over; good	Average; good	....	Over; very good	Average; good	Average; good	Allan N. Rawes, R.H.S. Gardens, Wisley, Ripley.
	Under; good	Average; good	Average; good	Average; good	....	....	Over; very good	Over; very good	Average; good	H. Prince, Polesden Lacey Gardens, Dorking.
SUSSEX...........................	Under; good	Under; good	Under; good	Average; good	....	....	Over; very good	Over; very good	Over	E. M. Bear, Magham Down Hailsham.
	Under	Under	Average	Average	....	....	Average	Under	Under	Leon Squibbs, Stonehurst Gardens, Ardingly.
	Under; good	Average	Under; good	Average	Average	Under; good	Average; good	Average; good	Average	Arthur Wilson, Eridge Castle Gardens, Tunbridge Wells.
	Over	Over	Under	....	Average	Under	Over	Under	....	Ernest Markham, Gravetye Manor Gardens, East Grinstead.
	Average	Under	Under	Average	Under	Under	Average	Average	....	W. H. Smith, West Dean Park Gardens, Chichester.
	Average	Over	Average	Under	....	....	Over	Average	Under	Edwin Neal, Tilgate Gardens, Crawley.

CONDITION OF THE FRUIT CROPS—*(continued).*

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
WILTSHIRE	Under; good	Over; very good	Under; good	Average: good	Under	Under	Over; good	Under; bad	Under	H. H. Mills, Fontill House Gardens, Tisbury.
	Under; good	Over; good	Under; good	Average; good	Average; good	....	Over; very good	Over; very good	Average	J. Yandell, Manor Gardens, Ramsbury.
England, N.W.										
CUMBERLAND	Over; good	Average; good	Under	Average; bad	....	Under; good	Average: very good	Average; good	....	J. Service, Holme Hill Gardens, Dalston.
LANCASHIRE..................	Over; very good	Under	....	Average; good	Average; good	....	Over; very good	Average	....	W. B. Upjohn, Hall Gardens Worsley, Manchester.
WESTMORELAND	Under; good	Under; bad	Under; good	Average: good	Average; good	....	Average; good	Average: good	....	Robert Dacre, Underley Gardens, Kirkby, Lonsdale.
	Average	Under	Under	Average	Average	....	Over	Average	....	James Jeffrey, Lowther Gardens, nr. Penrith.
England, S.W.										
CORNWALL.....................	Under; bad	Under; good	Under; good	Under; good	Average; good	....	Average; good	Average; good	....	Harry Williams, Tolvean Gardens, Redruth.
DEVONSHIRE	Average; good	Over; good	Under; bad	Average; good	Under; good	Average; bad	Average; good	Average; bad	Average; good	E. E. Bristow, Castle Hill Gardens, Filleigh, Barnstaple.
	Under	Over	Under	Under	Under	....	Average; good	Over; good	....	Gilbert Sleep, Hartland Abbey Gardens, Hartland.
	Under	Over	Under	Under	Average	Under	Over	Average	Average	P. C. M. Veitch, Royal Nurseries, Exeter.
SOMERSET	Under; good	Average; good	Under; good	Average; good	Average; good	Under; bad	Average; very good	Average; good	Average; good	James Glasheen, Hestercombe Gardens, Taunton.
	Average; good	Over; good	Under; good	Over; good	Over; good	Over; good	Over; good	Over; good	Average	Grigor Roy, Halswell Park Gardens, Bridgwater.
GLOUCESTERSHIRE......	Under; good	Average; good	Under	Under	Over; good	Average; good	Over; very good	Over; very good	....	Frank J. Clark, Westonbirt Gardens, Tetbury.
	Under	Over	Under	Average	Under	....	Average	Over	....	Wm. J. Jefferies, Cirencester.
	Under	Average	Under	Average; good	Average; good	....	Over; good	Average; good	Over; good	John Banting, Tortworth Gardens, Falfield.
	Under	Average	Under	Average	Average	Average	Over; very good	Average	Average	G. H. Hollingworth, Shire Hall, Gloucester.
HEREFORDSHIRE.........	Under	Over	Under; bad	Over	Average; good	Under; bad	Over	Average; good	Under	F. Roberts, Stoke Edith Park Gardens, Hereford.
	Over; good	Over; good	Under	Under	....	....	Over; good	Average; good	Over	Thomas Spencer, Goodrich Court Gardens, Ross.
SHROPSHIRE	Average; very good	Average; good	Average good	Over; good	Under	Under: very good	Over; very good	Over; very good	Under	Roger F. Jones, Oteley Hall Gardens, Ellesmere.
	Average; good	Under	Under	Under	Under	Average; good	Average; good	Under; good	Under	E. F. Hazelton, Yeaton Peverey Gardens, Bomere Heath.
WORCESTERSHIRE	Average; good	Average; good	Average; good	Average; good	Average; good	Under; good	Average; good	Over; good	Average; good	William Crump, V.M.H., Oakridge, Malvern Link.
	Average; good	Under	Under	Average	....	....	Average; good	Average	Average	Ernest Avery, Finstall Park Gardens, Bromsgrove.
	Average; good	Over; good	Average; good	Average; good	Over; good	Under; bad	Over; very good	Over; good	Over; good	Geo. A. Emmett, Hillcrest Gardens, Evesham.
	Average; good	Average; good	Under; good	Average; good	Over; very good	Average; good	Over; very good	Over; very good	Average; good	G. E. Roden, Overbury Court, Gardens, Tewkesbury.
	Average; good	Average; good	Average; good	Average; good	....	Under	Average; very good	Average; good	Average	C. A. Bayford, Davenham Gardens, Malvern.
	Under; good	Under; good	Under; good	Under; good	Under; good	Under; good	Average; good	Average; good	Under	James Udale, 7, Ombersley Road, Droitwich.
WALES										
CARDIGANSHIRE	Over; very good	Average; very good	Average; good	Under	Over; very good	....	Over; very good	Over; good	....	W. Phillips, Derry Ormond Gardens, Llangybi.
	Under; good	Under; good	Under; bad	Under; bad	....	Under	Under; good	Under; bad	Under; good	D. H. Dunn, Hafod, Pontrhydygroes, Ystrad Meurig
CARNARVONSHIRE	Average; good	Under; bad	Under; bad	Under; bad	....	....	Average; good	Average good	....	J. S. Higgins, Glynllivon Gardens, Llanwnda.
DENBIGHSHIRE...........	Average; good	Under; bad	Under	Under	Average; good	Under	Over; very good	Over; very good	Average	R. H. Crockford, Horsley Hall Gardens, Gresford, nr. Wrexham.
	Average; good	Average	Under	Under	Average	Under	Average good	Over; good	....	J. A. Jones, Chirk Castle Gardens, Chirk, nr. Wrexham.
	Over; good	Average	Under	Average	Average	....	Over; good	Average	....	F. C. Puddle, Bodnant Gardens, Talycafn.

CONDITION OF THE FRUIT CROPS—*(continued.)*

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
GLAMORGANSHIRE	Average; good	Under; bad	Under; good	Over; good	....	....	Average; good	Over; very good	Average	W. S. Wright, Henstaff Court Gardens, Pontyclun.
	Under	Under	Under	Average	Under	....	Average; very good	Average;	....	C. T. Warmington, Penllergaer Gardens, Swansea.
IRELAND										
Ireland, N.										
KILKENNY	Under; good	Under; good	Under	Under	Over; very good	Under	Over	Average	Over; good	T. E. Tomalin, Bessborough Gardens, Piltown.
	Under; good	Under; good	Under; good	Under; good	....	....	Over; good	Average; good	....	Henry Hall, Shankill Castle Gardens, Whitehall.
MEATH	Under	Under	Under	....	Average	Average	Average	Under; bad	....	Michael McKeown, Julianstown, Drogheda.
TYRONE	Average	Under	Under	Under	....	....	Average very good	Average	....	Fred. W. Walker, Sion House Gardens, Sion Mills.
WESTMEATH	Under; good	Average; good	Under	Over; good	....	....	Average; very good	Over; good	Under	Wm. Allan, Pakenham Hall Gardens, Castlepollard.
Ireland, N.E.										
DOWN	Under; bad	Average; good	Under; good	Under; bad	....	Under	Average; good	Under; bad	....	T. W. Bolas, Mount Stewart Gardens, Newtownards.
Ireland, S.										
CORK	Under; good	Under; good	Under; good	....	....	....	Average; bad	Average; bad	....	J. Dearnaby, 17, St. Patrick's Terrace, Magazine Road.
KILDARE	Average	Average	Under	Average	Under	Under	Average	Average	Under	Alexander Black, Carton Gardens, Maynooth.
CHANNEL ISLANDS										
GUERNSEY	Under; good	Under; good	Under; good	Under; good	....	....	Over; very good	Average; good	....	C. Smith and Son, Caledonia Nursery, Guernsey.
JERSEY	Average; good	Under; good	Under	Under; good	Under.	Under	Average; good	Over; good	....	Jas. Harper, Springfield Nursery, St. Heliers.
	Under; bad	Under; good	Under; bad	Under; bad	Under	Under	Average	Under; bad	....	Thomas Sharman, The Imperial Nursery, St. Mark's Road, St. Heliers.
ISLE OF MAN										
DOUGLAS	Under	Under	Under	Under	....	....	Average	Over; bad	....	James Inglis, Peel Road Nursery.

SUMMARIES OF THE HARDY FRUIT CROPS

SCOTLAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	31	31	31	30	15	11	31	31	4
Average	20	14	6	16	7	3	17	14	1
Over...	2	1	1	5	4	—	12	14	—
Under	9	16	24	9	4	8	2	3	3

ENGLAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	128	128	125	122	94	70	128	128	87
Average	48	60	17	64	56	14	65	74	43
Over	10	32	—	20	17	1	60	35	9
Under	70	36	108	38	21	55	3	19	35

WALES.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	8	6	8	8	5	3	8	8	3
Average	4	—	3	2	3	—	4	3	2
Over	2	2	—	1	1	—	3	4	—
Under	2	4	5	5	1	3	1	1	1

IRELAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	8	8	8	6	3	4	8	8	3
Average	2	3	—	1	1	1	6	5	—
Over	—	—	—	1	1	—	2	1	1
Under	6	5	8	4	1	3	—	2	2

CHANNEL ISLANDS.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	3	3	3	3	2	2	3	3	—
Average	1	—	—	—	—	—	2	1	—
Over	—	—	—	—	—	—	1	1	—
Under	2	3	3	3	2	2	—	1	—

ISLE OF MAN.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	1	1	1	1	—	—	1	1	—
Average	—	—	—	—	—	—	1	—	—
Over	—	—	—	—	—	—	—	1	—
Under	1	1	1	1	—	—	—	—	—

GRAND SUMMARY, 1924.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	179	177	176	170	119	90	179	179	97
Average	75	77	26	83	67	18	95	97	46
Over	14	35	1	27	23	1	78	56	10
Under	90	65	149	60	29	71	6	26	41

SUMMARY OF 1923 FOR COMPARISON.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	183	181	183	174	124	106	184	183	104
Average	41	5	18	63	48	11	119	118	6
Over	7	—	—	3	2	1	35	25	—
Under	135	176	165	108	74	94	30	40	98

NURSERY NOTES.

MESSRS. DANIELS BROTHERS OF NORWICH.

The Railway Companies of Great Britain owe more than they would be willing to admit to the nurserymen whose grounds abut upon their systems, and practical acknowledgment might take the form of treating them generously, instead of scurvily, as they are prone to do at the present time. In all parts of the country there are examples of how splendidly nurseries add to the charm and relieve the tedium of a journey, and specific notice of one will suffice to prove my statement. It is on that section of the L.N.E.R. which lies between Wroxham and North Walsham (in the land of the famous Norfolk Broads), north of Norwich and south of Cromer. Throughout a long stretch the lines bisect the Tunstead fruit and seed farms of the celebrated firm of Messrs. Daniels Bros., Ltd., Norwich.

On the one side there are masses of beautiful flowers of such area as to be distinguished easily from the windows of the fastest expresses, while on the other side there are thousands of fruit trees and bushes whose tempting burdens must engender envious thoughts in the minds of thirsty travellers. The floral effect can be enjoyed by all who travel on the line; the fruit feast must, perforce, be enjoyed in anticipation, which is small satisfaction on a hot day.

He or she, however, who would fully enjoy the cup of pleasure must proceed on foot, and if the guide is Mr. John Clayton, one of the firm's directors, the pleasure will be great indeed. A few weeks have sped since an interesting and instructive visit was paid, but time has not obliterated, and will not obliterate, from mind the rich and varied features that were seen.

It must not be thought that the planting is done for spectacular effect and nothing more. Beyond the beauty, and of primary importance to the firm, there is the utility—these broad stretches of many flowers must provide seeds as true to type as the skill of intelligent men, constantly watching and persistently "rogueing," can make them. For instance, Daniels' strain of Auricula-eyed Sweet William has been renowned for a couple of generations, but it is subjected annually to the same strict selection as it was in those earlier years when its foundations were being laid. Yearly there appear flowers whose Auricula eye is not immaculate and the plants are torn out ruthlessly. Precisely as it is with the particular plant named so it is with all others which show proclivities towards variation—one, or a score, or a hundred "rogues," there is no heart softening, and if the great crash comes, as it is not unknown on occasion, the whole stock goes because the reputation of the firm must be kept unsullied, no matter what the cost may be.

To pass from flowers to vegetables, to which similarly strict rules are applied, we see in Daniels' Incomparable Dwarf French Bean, in Daniels' King Cauliflower, in Daniels' Defiance Cabbage, and in all other of the firm's specialities a trueness that is little short of wonderful, and is an emphatic tribute to the thoroughness which characterises a labour that must be a matter of love as well as of money and is always a matter of pride in an untarnished name.

The visitor must turn to the fruit quarters to see nursery culture pure and simple plus plantation culture, or in other words, young trees in long, straight rows for ultimate distribution among the private gardens in all parts of the country, and others planted in exactly the manner as is adopted in the commercial fruit garden. Such a comparison is obviously of substantial advantage since it enables the visitor to decide not merely whether a particular variety makes a handsome tree, but whether it backs up its handsomeness by producing fruit in such abundance as to give the grower a chance to secure a return on his capital. It must suffice to give one example of this phase of the work since it was a physical impossibility to traverse the whole of the 350 odd acres in detail. The top fruit consists of Bramley's Seedling and Early Victoria (Emneth Early), Apples, standards, planted alternately, the latter to come out when the former demand all the space, while the undercrop comprised several varieties of Raspberries with Red Cross far in front of its neighbours in productiveness and vigour of growth.

In the nursery section the principal kinds are Apples and Black Currants, and the ages range from this season's buds to two and three years old trees of the former, and from summer cuttings, *i.e.*, green tips inserted in cold frames in June, to bushes in full bearing of the latter. In one and all there stand out conspicuously clean, firm wood and tough, intensely green leaves which are indicative of excellence of fibrous root development in a perfectly congenial soil, and suitability for transplantation without real risk of loss or check. So far as propagation goes the green or soft cuttings which are being utilised for Black Currants are most interesting. There are not wanting signs that these give plants which do not suffer from reversion and big bud to the same degree as do those from the normal autumn cuttings and the point is being tested in several thousand plants of Daniels' September Black, which is an extraordinarily prolific producer of splendid fruits, ripening three weeks to one month later than such varieties as Boskoop Giant and Baldwin's Black.

It will have been noted that no mention is made in the paragraphs above of Pears, Plums, Cherries, Peaches, Nectarines and Gooseberries and other fruits as growing at Tunstead, especially as these are of as much importance as those named to a firm which is prepared to supply the growing things for a complete garden. The reason for this is that these kinds find a congenial home in the ample space provided at Town Close Nurseries within the confines of the City of Norwich itself. There they may be seen in numbers and excellence, living testimonies to the purity of the atmosphere of the district in which they are growing. Here, too, are trials of Peas, Beans and all other vegetables, thousands of Roses, hardy plants of many and various kinds, shrubs and trees, with houses of pot Vines, juvenile Roses and other things that are far too numerous for individual mention. And on all hands it is apparent that directors and foremen alike appreciate the paramount importance of scrupulous cleanliness. Hoeing is one of the processes of nursery culture that may be said never to cease at Tunstead and Norwich and the consequence is that the general aspect of both places is pleasing in its smartness. Readers of the *Gardeners' Chronicle* who find themselves in Norwich, or can make a pilgrimage thereto, should see to it that one of the first items of their itinerary is a visit to Messrs. Daniels' nurseries in the City and at Tunstead." *Visitor.*

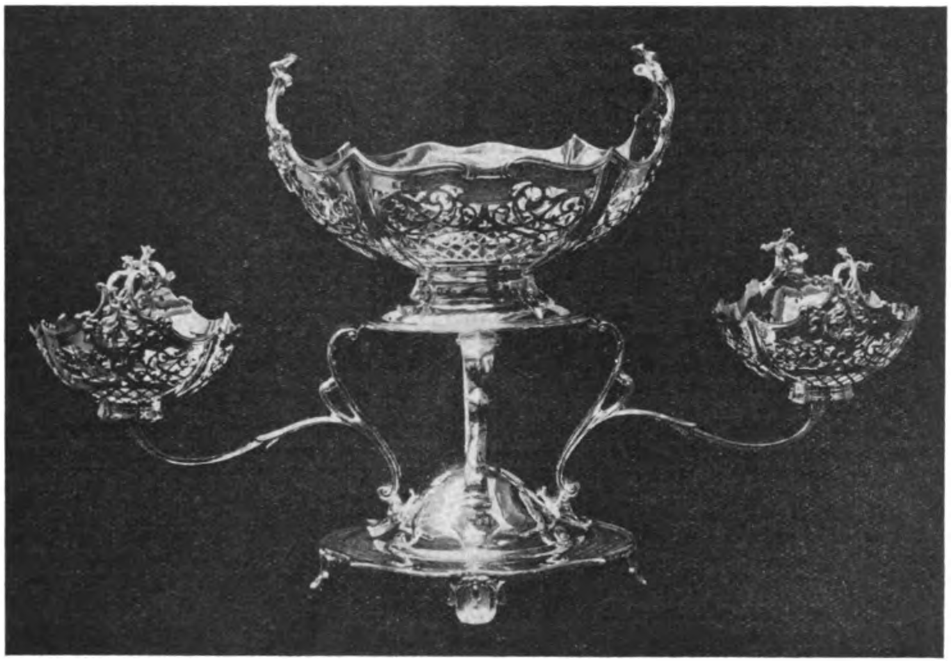


FIG. 30.—SILVER CHALLENGE TROPHY OFFERED AT THE SOUTHPORT SHOW (AUGUST 27) FOR THE BEST DECORATED TABLE OF FRUIT (see p. 60).

CULTURAL MEMORANDA.

SYRINGING FRUIT TREES UNDER GLASS.

The syringing of fruit trees in unheated houses at this time of the year should be done with discretion, as the temperature of the house may rise very suddenly or fall equally as quickly. At the time when Peach houses are closed, the weather may be bright, yet shortly after the trees are syringed the weather may become over-cast and cloudy and remain dull for the rest of the evening, with the result that the trees remain in a wet condition all through the night. In some gardens it is the practice to syringe the fruit trees at the time of closing the houses in the evening, the exact time being regulated by the situation of the houses.

Certain varieties of Peaches retain moisture on their foliage for a long time, whilst others dry very quickly. The following varieties require very little syringing:—Early Alfred, Royal George, Early Grosse Mignonne, Dymond, Thomas Rivers, and Goshawk. The last I have seen very badly infested with mildew in heated houses through being syringed in the afternoon at closing time and the foliage not drying before the evening. All the varieties enumerated have more or less American strain in them and the leaves have a rough surface. The following varieties have glands and smoother or rather more glossy leaves that dry much quicker:—Rivers's Early York, Bellegarde, Grosse Mignonne, Violet Hâtive, Nectarine Peach, Alexandra Noblesse, and Walburton Admirable. These may be syringed more freely with safety.

Nectrines may be syringed with safety so far as the foliage is concerned, but if the fruit does not become dry by the evening and the weather is cold, it would in due course bring a rough surface on the skin and small cracks would appear just before the fruit takes its last swelling, giving it a rough and uneven appearance.

Syringing does not seem to effect Pears so much, but I think it is much better for the fruit and foliage to become dry by the evening. For very many years I have discontinued syringing in the afternoons in unheated houses, and find that a thorough syringing in the morning is all that is required. Early in the season so soon as the young growth will stand the force of the syringe, I commence syringing lightly, and increase the amount and pressure as growth advances, so soon as the fruit will stand it. I make use of a motor pump in favourable weather about seven a.m. in the morning. After syringing the trees I close the house for two hours and allow it to become filled with steam for some time. As soon as the steam disappears and the trees commence to dry I admit a little air, about nine a.m. By adopting this method my trees are never troubled with mildew or insect pests at the time the fruit is ripening. Red spider is sometimes troublesome, but after the fruits are gathered I use the motor pump again to destroy this pest.

The motor pump I use is the Evinrude; it is a most useful pump of two-and-a-half horse power, and will deliver the water through 1¼-inch hose at a very high pressure at a distance of 100 yards. This pump is easy to manage and may be wheeled from house to house like a wheelbarrow. *E. Neal, Tilgate Gardens, Crawley.*

HOME CORRESPONDENCE.

Pinus rudis.—As I am responsible for the identification of the Pine referred to as Pinus rudis in the graphic description of the arboretum at Westonbirt (*Gard. Chron.*, June 7, 1924), I should like to explain that the tree is labelled Pinus Montzumae var. rudis, a description of which will be found in the *Handbook of Coniferae*, page 421. The writer of the article quoted above omitted to quote the specific name, an unfortunate and misleading practice, as the note by *J. Richmond*, in a recent issue, clearly shows. This variety was first described by Shaw (*Pines of Mexico*, p. 22, 1909), and is distinguished from var. Hartwegi, Engelmann, by the leaves being in fives (occasionally in sixes or sevens) instead of in threes and fours, and by the mature cones being brown instead of black. The Westonbirt tree, which is growing on the edge of a plantation next the entrance lodge, is a very fine one, being now about fifty-five feet high by five feet five inches in girth. It is believed to have been planted about 1855. *A. B. Jackson.*

Strawberry The Duke.—I have read the remarks of Mr. Wadds on page 31, and would state that from my experience of this grand Strawberry I have no hesitation in giving it first place, and I have grown nearly all the Laxton Strawberries. We started picking The Duke several days before Royal George. My employers were pleased with it both as to size and flavour. With us the foliage is much finer than that of many other sorts. *W. M. Geddes, The Gardens, Brockwood Park, Alresford.*

SOCIETIES.

NATIONAL CARNATION AND PICOTEE.

JULY 22.—The annual show of this special flower society, which was held in conjunction with the recent R.H.S fortnightly meeting, was about the average in size and in the quality of the flowers. Amongst the exhibitors in the Open Division we missed the blooms of Mr. James Douglas, one of the society's old exhibitors. The principal prize winners were Messrs. LOWE AND GIBSON who were first for (a) six vases of Picotees, white ground; (b) six vases of Self Carnations; (c) six vases of Fancy Carnations, and were awarded second prize for six vases of Yellow-ground Picotees, and for six vases of Yellow-ground Fancy Carnations. Their best Picotees were Fairmaid (light edged), Quaker Girl and Gannymede (heavy edged). The Self Carnations included good blooms of Yvonne Thomas, Bookham Rose, and Dora Blick, while amongst their Fancies (other than yellow or buff ground) the best were Jennie Murray, A. St. C. Amos, and Mrs. G. Charrington.

Mr. R. MORTON, Woodside Park, who was first for six vases of yellow or buff ground Fancy Carnations, had good blooms of Lieut. Shackleton, Highland Mary, and Kelso.

In the principal Amateurs' Division the Martin Smith Memorial Challenge Cup was won by Miss SHIFFNER. In the class for three vases of yellow on buff ground Fancy Carnations, Miss SHIFFNER, Lewes, was first out of five exhibitors, and she had beautiful blooms of Viceroy and Kelso. Mr. J. FAIRLIE, Acton, was second. Mr. E. CHARRINGTON, Limpsfield, had the best three vases of Fancies other than yellow or buff ground, and he showed S. Griffiths, A. St. C. Amos and a splendid vase of Mrs. E. Charrington which was the premier Fancy. Mr. J. FAIRLIE was second.

Miss SHIFFNER was first for three vases of yellow-ground Picotees and three vases of Clove-scented Carnations. In the first she showed exceptionally good blooms of Mrs. J. J. Keen and Onward, both light-edged varieties. Amongst her Clove Carnations were Mrs. A. Brotherston and immense blooms of Rose Clove.

In the classes for one variety of each of the different colours, Miss SHIFFNER was exceedingly successful. Her first prize varieties were Purity (white), Border Yellow, Elizabeth Shiffner (terra-cotta), Jean Douglas (scarlet), Mrs. G. Marshall (maroon), Bookham Rose, and The Grey Douglas.

The winner of the Edmund Charrington Challenge Cup in the Third Division was Mr. E. H. PAINTER, Brentford. Other first prize winners in this division were Mr. H. A. KNAPTON, Orpington, and Mr. S. WILLIAMS, Chipstead.

The Cartwright Challenge Cup, which is annually awarded for the highest aggregate of points in the remaining classes, was won by Mr. F. H. SEYMOUR. Other first prize winners were Mr. C. B. R. GARNER, Bletchley, and Mr. Mr. A. J. WEEKS, Limpsfield Common.

The Seedling Classes were keenly contested. Mr. J. D. MURRAY won both the first and second prizes in class 38 with Myrtle Pettigrew, (see fig. 27) a delightful greyish-heliotrope, Fancy, with scarlet flakes, and Joan Wardle, an intense crimson maroon of beautiful form. Mr. A. J. WEEKS, Limpsfield Common, was first in class 34, and Mr. C. B. R. GARNER, Bletchley, won both first prizes in classes 35 and 36 with vases of good blooms.

PREMIER BLOOMS.

SELF CARNATION.—Joan Wardle. Shown by Mr. J. D. MURRAY.

FANCY YELLOW GROUND CARNATION.—Myrtle Pettigrew. Shown by Mr. G. D. MURRAY.

FANCY, OTHER THAN YELLOW GROUND.—Mrs. E. Charrington. Shown by Mr. E. CHARRINGTON.

CLOVE-SCENTED CARNATION.—Mrs. A. Brotherston. Shown by Miss SHIFFNER.

PICOTEE.—Eclipse, yellow ground, light edged. Shown by Mr. E. H. PAINTER.

ROYAL OXFORD HORTICULTURAL.

THIS Society's Commemoration Show held in the New College Cricket Ground on Tuesday, June 24, was quite up to the usual standard both in quality and quantity of exhibits. Although early for vegetables some capital collections and dishes were staged: Mr. D. WADHAM had an excellent first prize exhibit, and Mr. TOWN's collection contained a fine dish of Runner Beans.

Roses were magnificent, especially in the exhibits arranged by Mr. J. MATTOCK, Mr. G. PRINCE and Mr. H. DREW. Among the most prominent varieties were Flame of Fire, Mrs. H. Morse, Padre, and Mabel Morse. Mr. C. ENGELMANN excelled himself in the variety and arrangement of his Carnations. The varieties that made the greatest appeal were Delicate, Saffron, Tarzan, Laddie, Peerless and Scarlet Iona. Sweet Peas made a delightful show and those staged by Mr. TOWN in the open class were well worthy of first prize honours. In the Society's class for Sweet Peas Mr. H. DAY's collection secured for him a first prize; his varieties of note were Charity, Youth, Matchless, Picture and Valentine.

Amongst the groups not for competition was one of outstanding merit artistically arranged, as on former occasions, by Mr. A. GIBSON, gardener to Mrs. H. Morrell, Headington Hill Hall. Here was to be seen some magnificent and well grown plants of Clarkia in great variety, Gloxinias, Malmaison Carnations, Streptocarpus, Lilium Harrisii, Lycastes, Phaius, and a splendid specimen of Epidendrum vitellinum majus. Godetia Lady Albermarle was also used with telling effect.

The rock garden arranged by Mr. H. TUCKER was quite a new feature, and we hope a permanent one at these shows. It won for him a thirty-guinea Silver Challenge Cup presented by E. P. WEBBER, Esq., of Oxford. Mr. JOHNSON was again well to the fore with herbaceous flowers, staging a bold and imposing exhibit. Mr. A. ROWLES, Market Street, Oxford, exhibited, not for competition, an excellent arrangement of Sweet Peas and other choice flowers. Mr. W. MATTOCK of Headington deserved congratulations upon his very tastefully arranged group, quite a novel exhibit and different to the usual style of grouping.

In the competitive class for a group of plants, Mr. TOWN's first prize exhibit contained a choice selection of Amaryllis, Codiaeums, Liliums, and Clerodendron Balfouri. For a group of flowering plants, one kind only, Mr. C. A. WASHBROOK led with a handsome display of Begonias.

ROYAL HORTICULTURAL OF IRELAND.

THIS Society's summer exhibition was held on July 9 and 10 and proved to be eminently successful. Roses and Sweet Peas were conspicuous by reason of their quality and quantity, and an outstanding feature of the Rose section was a particularly fine stand put up by Messrs. WM. WATSON AND SONS, LTD., Killiney Nurseries, Killiney, Co. Dublin. This exhibit included handsome columns of Queen Alexandra, Lady Inchiquin, Independence Day, Alex. Elmslie, Emma Wright, Golden Emblem, Mrs. Courtney Page, Mabel Morse, Lamia, Mme. Ed. Herriot, Hortulanus Budde, and Sunstar, the last variety captivating the lady visitors.

The handsome Silver-Gilt Medal presented by the *Gardeners' Chronicle* for "The best amateur exhibit of rare plants or flowers" was awarded to the Rev. CANON KINGSMILL MOORE, D.D., Cedar Mount, Dundrum, Co. Dublin, for a fine collection of new and rare native Ferns; a very interesting table of hardy flowering shrubs, including such good things as Olearia insignis, Rhapiolepis indica, Dendromecon rigidum, and Buddleia Colvillei, to which the Society's Silver Medal was awarded, was staged by Capt. Lewis Riall, Old Conna House, Bray, Co. Wicklow (gr. Mr. W. Webster).

ROYAL HORTICULTURAL.

Trial of Helianthemums.

Wisley Trials, 1924.

The following awards have been made to Helianthemums by the Royal Horticultural Society after trial at Wisley.

Awards of Merit.

The Bride (foliage grey), sent by Mr. F. G. Wood, Ashstead; *Ben Nevis*, sent by Mr. J. Nicoll, Monifieth; *Nicoll's Apricot*, sent by Mr. W. M. Christy, Emsworth; *Ben Venue*, sent by Mr. J. Nicoll, Monifieth.

Highly Commended.

Wisley Primrose sent by Mr. R. C. Notcutt, Woodbridge; Afflick, Somerville's Copper, and Copper (alike), these three sent by Mr. W. M. Christy, Emsworth; H. auranticum (foliage grey), sent by Messrs. Bakers, Wolverhampton; Brilliant (foliage grey), sent by Mr. F. G. Wood; Fire Dragon (foliage grey), sent from Wisley; Orange (foliage grey), sent by Mr. W. M. Christy; Ben Ledi, sent by Mr. J. Nicholl, Monifieth.

Commended.

Umbellatum, sent from Wisley; Goldie, St. John's College Yellow (foliage grey), and Rhodanthe carneum (foliage grey), these three sent by Mr. W. M. Christy; Wisley Pink (foliage grey), sent by Mr. R. C. Notcutt, Woodbridge; Magnificence, and Magnificent (alike), both from the R.H.S. Gardens, Wisley; Jock Scott and Watergate Ruby, both sent by Mr. W. M. Christy; Pink Beauty (foliage grey), sent by Messrs. Bakers; Ben Avon, sent by Mr. J. Nicoll, Monifieth.

SAFFRON WALDEN.

Saffron Walden Flower Show, held in the grounds of Farmadine, the residence of Mr. C. W. Rolfe, J.P., on Thursday the 24th ult., surpassed last year's exhibition, when the function was revived with much success after a long period of inactivity.

From time immemorial Saffron Walden has been noted for its horticulture. It derived its name from the cultivation of the Saffron flower; later it was the home of the Hollyhock, and now it has become famous among horticulturists for its Carnations. Noted authorities have attributed to Saffron Walden the honour of being the first place to establish allotments for working classes, but the town does not claim this honour, for the earliest records of "Saffron Walden Spade Husbandry Society" go to show that information as to the methods adopted for the working of allotments was asked for and obtained from Bassingbourne, Cambridgeshire. But it can claim to have as many, if not more, allotments than any other town of its size. There are allotments adjacent to every road leading out of the town, practically every working man in the town has one, and the great majority of them are a credit to their cultivators.

Complimentary and trade exhibits were a big feature at this year's show. Miss Gibson of Hill House, Saffron Walden (gr. Mr. G. Barker) had a magnificent bank of Begonias, fifty feet long, tastefully arranged with Cannas, Francoa and Palms, with a beautiful Bougainvillea as the centrepiece; and Adèle Lady Meyer, of Shortgrove, Saffron Walden (gr. Mr. E. Guile) had a very effective and tastefully arranged group of Campanulas in mauve and white, with Bamboos, Bocconia and grasses, covering a space of forty feet by fifteen feet. Each of these complimentary exhibits was awarded a gold medal.

The whole length of one side of a large marquee was occupied by Messrs. J. Vert and Sons, with two splendidly grown groups of Cannas, arranged with Palms and Ferns, with a magnificent group of Campanulas and Spiraeas in the centre; and the same firm occupied the whole of another large marquee with a choice complimentary exhibit of pot fruit, very effectively arranged. Along the whole side of a large marquee was a superb group, 70 feet long by 12 feet wide, of 300 dozen Carnations in variety, set up in vases and stands with striking effect by Mr. C. Engelmann; and Mr. H. G. Baker, of Saffron Walden, had a choice complimentary display of fruit.

In the competitive trade classes wherein cash prizes of £10 and £5 were offered, there were some gorgeous displays. Messrs. T. Rivers and Son, Ltd., of Sawbridgeworth, were awarded the first prize for a magnificent collection of pot fruit trees, 20 feet by 12 feet wide; and Messrs. A. J. and C. Allen, of Norwich, carried off a second prize for a representative display of Roses in fifty varieties. In this class Messrs. D. Prior and Son, of Colchester, had a very fine stand of well grown Roses; Messrs. Robert Bolton and Son, of Birdbrook, Halstead, had a beautiful display of two dozen large bunches of Sweet Peas; and Mr. W. Wells, jnr., Merstham, had a very fine display of herbaceous cut flowers.

In the open competitive classes, Mr. H. H. Claydon, of Bishop's Stortford, had eight exhibits and achieved the great distinction of winning eight first prizes. He won the Silver Challenge Cup, offered by Mr. C. Engelmann, for his table of Roses. Lady Babington Smith, The Vineyard, Saffron Walden, won the premier award for a collection of vegetables, which carried with it the Silver Challenge Cup presented by Messrs. J. Vert and Sons. The marquee containing the ladies' table decorations, baskets and vases of flowers, was a source of great attraction.

Mrs. F. Vert won the first prize and the Silver Challenge Bowl value 50 guineas (to be held for one year) presented by Lady Babington Smith, with a delicate and tastefully arranged table in pale cerise and white, the flowers used being Pelargonium Manglesii with Codiaeum leaves and Lily of the Valley. Miss H. Claydon was second with a pretty scheme of cerise Ivy-leaved Pelargonium, Acer leaves, Lavender, and Selaginella; Mrs. Engelmann was third with a tastefully arranged table of lemon and mauve Carnations, relieved with Asparagus Sprengeri and Thalictrum foliage.

BRITISH FLORISTS' FEDERATION.

A meeting of the Market Floral Committee of the British Florists' Federation was held at Messrs. Monro's Salerooms, Tavistock Street, on Monday, July 21. No awards were made to flowers submitted, as these were not considered to be any advance on varieties already on the market.

The report of the Sub-Committee appointed to visit Messrs. Ireland and Hitchcock's nursery at Mark's Tey was submitted, and on the recommendation of the Sub-Committee the provisional Award of a First-Class Certificate to Dianthus Mascott and the provisional Award of Merit granted to Sweet Pea The Beacon at the May meeting were confirmed. As already notified, these plants were submitted by Messrs. Ireland and Hitchcock.

The Committee agreed that in future not fewer than six specimens of a pot plant should be submitted for the consideration of the Committee and not fewer than twelve blooms of any flower submitted in an unbunched condition, and one market bunch and twelve loose flowers in the case of flowers usually marketed in bunches.

There will be no meeting of the Committee during the month of August, consequently the date of the next Floral Committee will be September 22.

BRENTFORD ALLOTMENT.

By way of experiment the Brentford Allotment Association held its first summer show on Saturday, July 19, at Clifden Park, Brentford, in conjunction with the local Brotherhood sports. The Association has for many years held a most successful exhibition in September, and in former years the Brentford Horticultural Society, now no longer in being, used to hold a good summer show in the old county town of Middlesex. The new venture, therefore, was looked forward to with considerable interest, especially as the schedule was prepared and arrangements made somewhat hastily.

The experiment was a success and one tent and the large "hut" were comfortably filled with flowers, fruits and vegetables, the bulk of which were shown by the allotment holders, although competition was open to all residents. The vegetables were in fine condition and the way they were displayed would have done credit to many a large provincial show; every specimen was beautifully clean and all were well arranged. Mr. C. Cox, Mr. F. Cox, Mr. W. Clayden, Mr. D. Jacobs, Mr. W. J. Brown, Mr. Huxtable and Mr. Norgett were the principal prize-winners. In the fruit section the Gooseberries, Loganberries and Cherries were excellent. In the ladies section, Mrs. D. Jacobs, Mrs. Bedford and Mrs. Sholl were the most successful competitors.

Messrs. Sutton and Sons, Reading, staged a superb collection of Sweet Peas along one end of the tent and were deservedly awarded a Gold Medal for a display which was admired as much for the elegance of its arrangement as for the excellence of the flowers.

The show was opened by King Manuel and Queen Augusta Victoria of Portugal. Their Majesties were met by Mr. C. H. Curtis, Chairman, and escorted to the dais in the centre of the Park, where they were received by Mr. Forester Clayton, the President. Girl Guides, Boy Scouts, and the local fire brigade formed a guard of honour. Following the welcome extended by the president, King Manuel declared the show open. Mr. Curtis, in thanking their Majesties for coming to Brentford, reminded the King that several years ago his mother, Queen Amelie had opened a summer show in Boston Park, and he stated that Boston Park with its fine old mansion and gardens had recently been purchased as a public Park for the town. Mr. and Mrs. Curtis had the honour of entertaining their Majesties to tea after they had declared the show open and inspected the exhibits, in which they showed great interest.

READING GARDENERS'.

One of the most enjoyable of the long series of Annual Outings held by the Reading and District Gardeners' Mutual Improvement Association took place on Wednesday, July 16, when by the kind permission of J. de Rothschild, Esq., a visit was made to the magnificent pleasure grounds and gardens of Waddesdon, Bucks. Three char-a-bancs were engaged to take the party and a pleasant ride was enjoyed through the hilly district of Buckinghamshire, via Maidenhead, Marlow, High Wycombe, Rinces Risborough, and Aylesbury. On arrival at Waddesdon the visitors adjourned to the Five Arrows Hotel for luncheon. Exactly eighty sat down, presided over by the President (Mr. Councillor Frank E. Moring) and supported by Mr. Johnson, Gardener at Waddesdon, Mr. M. Goddard, Chairman, Mr. Councillor T. Waldron, and several members of the Committee.

After lunch the visitors first visited the pleasure grounds and were at once attracted by four enormous beds of a seedling pink Begonia situated at the corners of the spacious lawns fronting the north entrance of the mansion. On the south side some extensive and lovely views were obtained across the Vale of Aylesbury towards The Chequers, now famed for its political associations, the terrace gardens were a blaze of colour, Pelargoniums being a dominant feature, the variety Waddesdon Pink being in striking contrast to the once old favourite Henry Jacoby. The statuary in the grounds is of a magnificent character and quite in keeping with the stately building which is of French design. A ramble along the many walks afforded the members a glimpse of the numerous trees and shrubs; the Cedars (Cedrus atlantica glauca) and the Chestnuts in variety were especially fine.

After a short rest by the way the gardens and houses came under inspection. Here the party was joined by Mr. Leonard Sutton (vice-president) and Mr. Pole-Routh, a former President of the Association. The long range of fruit houses containing magnificent crops of Grapes, Peaches, Figs and Cherries, excited the admiration of everyone. Other houses contained Crotons, Tomatos and a splendid batch of Pink Malmaison Carnations. Two sheltered tanks filled with the blue Water Lily in full flower created a great amount of interest. Outside, the Rose borders were looking gay with such varieties as White Queen, Chas. E. Shea, Mme. E. Herriot, Golden Emblem, etc., and a similar remark applies to the border of perennials.

At 5.45 tea was partaken of, when the President voiced the feelings of the members in proposing that a hearty vote of thanks be accorded to Mr. J. de Rothschild for his kindness in throwing open his gardens and grounds for their inspection and to Mr. Johnson for the time given and the trouble he had taken in making the outing such a successful one. This was seconded by Mr. Sutton, who spoke of the great educational value of such outings to the members. Mr. Goddard tendered the sincerest thanks of the members present to the President, and to Mr. Sutton for their generous financial assistance.

The party left Waddesdon punctually to time (6.45), arriving at Reading just before ten o'clock, and all expressed the opinion that it was the most enjoyable outing participated in by the members, thanks to the excellent arrangements made for their comfort by the Sub-Committee.

HORTICULTURAL CLUB.

The annual general meeting of the Horticultural Club was held on the 22nd ult. at the Trocadero Restaurant, Piccadilly. There was only a small attendance and the chairman of the Committee, Mr. Gerald Loder, presided. The Hon. Secretary, Mr. G. F. Tinley, read a letter from Sir J. T. D. Llewelyn, expressing his regret that, being now in his eighty-ninth year, he was unable to be in London to be present at the meeting. He stated that he had vivid and pleasant recollections of many similar anniversaries. The annual report of the Executive Committee was submitted of which the following are extracts:—

Extracts from the Report.

"The Committee regrets that their efforts to obtain a suitable Club room militates greatly against the success of the Club, which has been in existence for nearly fifty years. The number of members on the register is 150. For some three or four years the Club was able to carry on its activities without asking members for their subscriptions, but at the last annual meeting it was decided to fix the subscription at 10s. 6d. The Committee would especially appeal for better support of the Club dinners and lectures, without which it will be impossible to continue them. On the occasion of the Annual Meeting in May, 1923, Mr. F. Kingdon Ward gave an account of his last plant-collecting expedition in Asia and showed a most delightful series of lantern pictures illustrating his remarks. On February 12, following a Club dinner at the Trocadero Restaurant, Dr. A. W. Imms, M.A., Chief Entomologist of the Rothamsted Experimental Station, delivered a most interesting address, illustrated by lantern slides, on 'The Life-histories of Certain Insect Pests,' and on March 11, Mr. J. Ramsbottom, President of the British Mycological Society, gave an illustrated lecture on 'Edible and Poisonous British Fungi.' All three lectures were outstandingly good and equal to the best delivered at any of the Club dinners, and it is to be regretted that so few were present on each occasion. The annual outing was held on Wednesday, July 25, when the members visited the gardens and State Apartments of Windsor Castle. The journey to Staines was made by charabancs and at Staines the party proceeded by a launch up the river to Windsor, the return journey to town being made in the cars. The thanks of the Club are due to Mr. A. McKellar for his kindness in receiving the members and acting as guide during the visit. On May 29, the members of the Federation Horticole Professionnelle Internationale were entertained to luncheon at the Connaught Rooms and to dinner and a musical entertainment on the evening of the same day at the Trocadero Restaurant, Piccadilly, by the Club, in conjunction with the Chamber of Horticulture, Horticultural Trades' Association, and the British Florists' Federation. These events were both very successful. The death of Sir Harry J. Veitch, V.M.H., for long treasurer and chairman of the Committee is a great loss to the Club, for Sir Harry took the keenest possible interest in the affairs of the Club and only resigned his offices when compelled to do so by ill-health. The Club has also lost by death another prominent member in the late Mr. H. Morgan Veitch. Mr. G. F. Tinley, who has been Secretary of the Club since June, 1918, having expressed a wish to retire, owing to pressure of other business, the committee desire to place on record their appreciation of Mr. Tinley's efforts as Secretary during the most difficult period of its existence and tender him their thanks for his work."

The Hon. Treasurer, Mr. P. R. Barr, submitted the financial statement which showed that there was a balance of £46 18s. 1d. He also stated that the sum of £30 12s. 6d. was contributed by the Club and the members to the fund for entertaining the foreign delegates of the London Conference of the Federation Horticole Professionnelle Internationale.

Lord Lambourne was re-appointed President and Sir J. T. Llewelyn and Mr. C. E. Shay re-elected vice-presidents. The officers were also re-elected with the exception of Mr. G. F. Tinley, who resigned the post of Hon. Secretary, but was asked to continue in office until a successor was appointed. The Committee was also appointed, Messrs. Whitpaine Nutting and Mr. E. Laxton being nominated to fill two vacancies.

Obituary.

George Dray.—We regret to announce the death of Mr. George Dray, superintendent of parks under the Lewisham Borough Council. Mr. Dray was seventy-eight years of age and was superintendent of parks at Lewisham before Lewisham became a borough. In his earlier years he was employed at Messrs. James Veitch and Sons' nursery at Chelsea, from whence he obtained an appointment on a tea plantation in India. After several years in India, he returned to England and occupied an important position at the Crystal Palace under the late Mr. Head, who was then superintendent of the gardens. His next appointment was to the charge of the Penge Recreation grounds where he made a great feature of the use of Cacti and other succulent plants in the bedding out arrangements each summer. Later, he was appointed superintendent of Sydenham Park, and subsequently had charge of all the recreation grounds, squares, street trees and open spaces under the Lewisham Borough Council. Illustrations of beds of Cacti, succulents, and other interesting plants at Penge and Sydenham Parks have appeared in these pages. Mr. Dray was an extremely modest man, of kindly disposition, and greatly loved by all who were associated with him in his work. He leaves a widow and one son.

Anthony Waterer.—We regret to announce the death of Mr. Anthony Waterer, of Knaphill Nursery and Home Bush, Horsell, Woking, who died on the 24th ult., in his seventy-fourth year. The name of Anthony Waterer has long been a household word in horticultural circles, for his father, Mr. Anthony Waterer, was a famous nurseryman and established a reputation for Rhododendrons far beyond the limits of this country. The late Mr. Waterer continued to specialise in Rhododendrons and also cultivated a large number of other trees and shrubs, including Conifers, Hollies, and Yews at Knaphill. The well-known Spiraea which bears his name was sent into commerce by Mr. Waterer senior, and this widely cultivated plant made the name of Anthony Waterer famous everywhere. His firm did a large business with growers in the United States and the Knaphill nurseries supplied many of the plants which were arranged in the Capitol grounds at Washington.

ANSWERS TO CORRESPONDENTS.

Asters diseased: *H.A.L.* The Asters are suffering from the black rot disease caused by the fungus Phytophthora cryptogea. All diseased plants should be removed and burnt and the healthy plants sprayed at once with Cheshunt Compound fungicide or Bordeaux mixture. Cheshunt Compound is made by mixing two parts by weight of copper sulphate and eleven parts of ammonium carbonate. Both chemicals should be finely powdered and after mixing the correct proportions the specific should be stored a day in a tightly corked glass or stone jar before using it. One ounce of the dry mixture should be dissolved in a little hot water and the solution made up to two gallons with water. It should not be put into tin or zinc receptacles. The plants may be watered with this solution and it is essential to give the ground a thorough soaking. When raising Asters next year, it would be wise to use sterilised soil, and to sterilise also the boxes or pots.

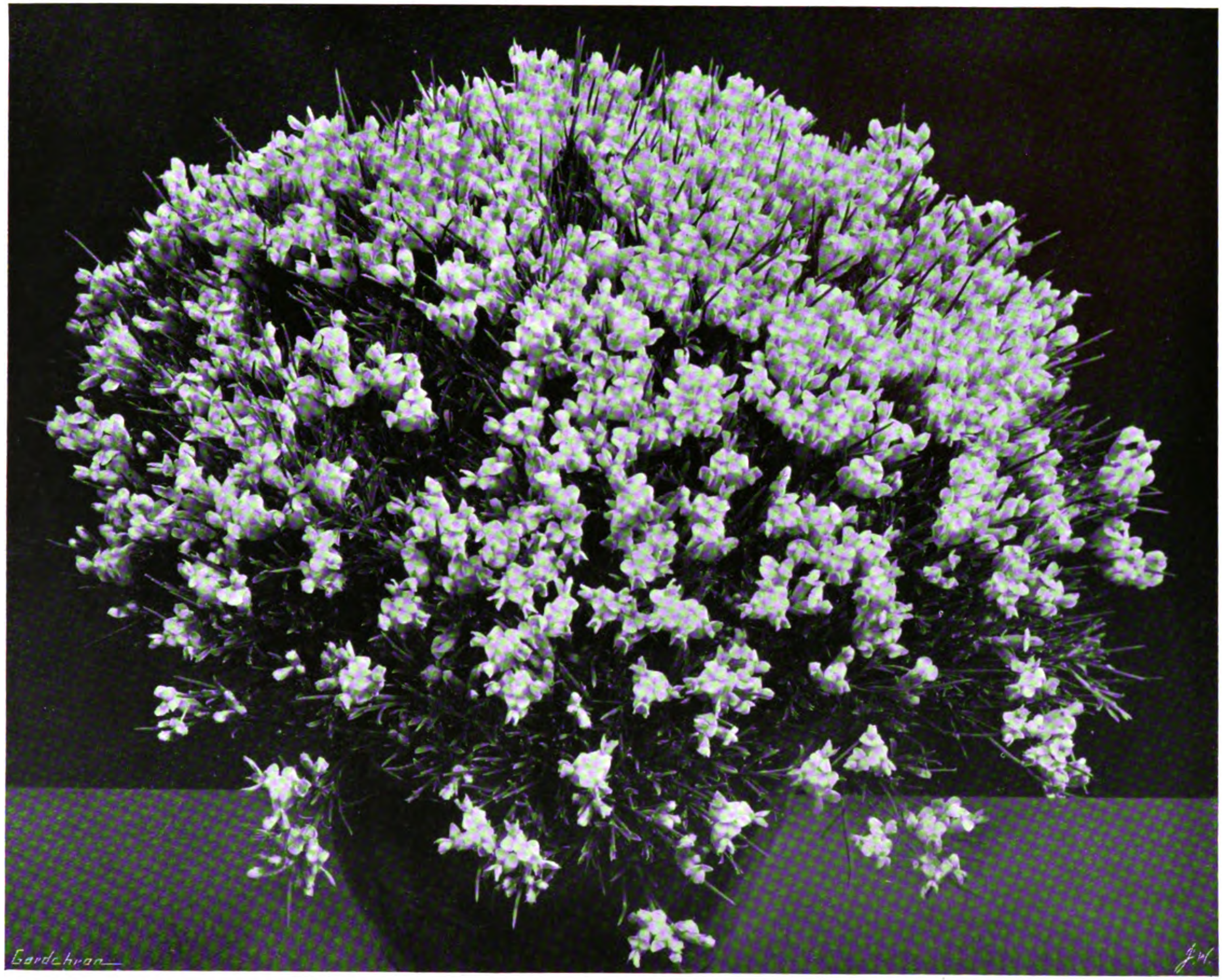
Correction: The award of a Silver Bunyard Medal was made to Gooseberries exhibited at the last R.H.S. meeting by John A. Nix, Esq., Tilgate, Crawley, and not C. G. A. Nix, Esq., Tilgate Forest Lodge, Crawley, as stated on p. 66.

Fellowship of the Linnean Society: *C.E.A.* You may obtain full particulars with regard to fellowship of the Linnean Society on application to Mr. B. Daydon Jackson, Linnean Society, Burlington House, Piccadilly, W.1.

Names of Plants: *W. F.H.* 1, Stachys lanata; 2, Tradescantia virginiana; 3, Pulmonaria officinalis; 4, Hieracium aurantiacum; 5, Lysimachia punctata; 6, Polygonum amplexicaule; 7, Eupatorium cannabinum; 8, Geranium Endressii; 9, Aster sp., cannot name without flower; 10, Thalictrum glaucum; 11, Aconitum chinense; 12, Galega officinalis. *J. M.* 1, Acaena inermis; 2, Erinus alpinus; 3, Teucrium Chamaedrys; 4, Leontopodium alpinum; 5, Asplenium Filix-foemina capitatum; 6, Adiantum pedatum. *J. V. P.* 1, too withered to identify; 2, Euonymus Sieboldianus; 3, Ligustrum coriaceum; 4, Daphne sericea; 5, Drimys Winteri; 6, Raphiolepis ovata.

Pear Midge: *H. E. H.* The young Pears are infected with the grubs of the Pear Midge. One of the best measures of getting rid of this pest is to run poultry in the orchard between June and August and again in the spring. The poultry will feed on the grubs and so prevent them from hatching out or producing another brood. Whereever possible all infested fruitlets should be picked and burnt as soon as they are detected, and the trees should be sprayed before the flowers open with a solution of soft soap and nicotine, which is claimed will prevent the egg laying of the midge. Where the midge has established a firm hold some growers go so far as to kill the blossoms, sacrificing the fruit for a season and thus starving out the midge. This plan, however, is of little value if growers in the surrounding parts do not adopt the same measures.

Communications Received.—H. R.—P. P.—X. Y. Z.—W. R. B.—M. E. M.—A. J. P.—B. R. W.—C. H. P.—B. B.—J. S.—J. H.—T. J. H.—A. O. F.—A. M.—Gypso.—N. O.—F. B.—W. O. L.—M. J. P.—M. M.—E. M. W.


Gardchron
J.W.

ERINACEA PUNGENS.

THE
Gardeners' Chronicle
No. 1963—SATURDAY, AUGUST 9, 1924.

CONTENTS.

Alpine garden—
  Geranium sanguineum 95
Apple blossom weevil ...
Bog garden—
  Pinguiculas 94
Books, notices of—
  Carnation Culture ... 95
  Jam Making 95
Bulb garden—
  Aphyllanthes monspeliensis 100
Clyde orchards 89
Dahlia poem, prize for the best 90
Ferns, new and rare varieties of native ... 94
Flower show judges of the future 100
Fruit crops, remarks on the condition of the 101
Fruit register—
  Melon Victory ... 95
Garden crops, diseases of... 89
"Gardeners' Chronicle" seventy-five years ago 90
Hardy flower border—
  Campanula van Houttei 94
  Polemonium caeruleum variegatum ... 94
Horticulture at the British Empire Exhibition 90
Imperial Botanical Conference 100
Indoor plants—
  Cyrtanthus 93
Orchid notes and gleanings—
  Cattleya Aphrodite 91
  Cattleya Mona ... 91
  Cypripedium spectabile 91
  Laelio-Cattleya Maisie 91
Rose garden, the—
  Rose Mrs. Henry Morse 91
Sassafras tree at Cannizaro, the 96
Societies—
  Hanley Floral Fête ... 104
  Manchester and North of England Orchid 103
  Newcastle Horticultural 103
  Royal Horticultural 103
  Yorkshire Agricultural 103
Trees and shrubs—
  Catawbiense Rhododendrons 94
  Deutzias in the Arnold Arboretum 95
  Osmanthus Delavayi 95
Vegetable garden ... 101
Ward's, Mr. Kingdon, eighth expedition in Asia 97
Week's work, the ... 92
Williams, Mr. Harry ... 90

ILLUSTRATIONS.

Cyrtanthus helictus 93
Rose, Mrs. Henry Morse 91
Sassafras officinale at Cannizaro, Wimbledon: summer view, 96; winter view, 97; botanical details of ... 90
Williams, Mr. Harry, portrait of 90

Supplementary Plate.
Erinacea pungens.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 62·2.

Actual Temperature :—
Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 6, 10 a.m.: Bar. 30·2.: temp. 60°. Weather, Fine.

Diseases of Garden Crops. Plant pathologists as well as horticulturists will find much to interest and instruct them in Professor Johanna Westerdijk's admirable address on the relation between horticulture and plant pathology delivered before the International Horticultural Congress held at Amsterdam in 1923 and now published in the report of the Congress.* It is a pleasure to find a distinguished plant pathologist taking so broad a view of the special problems which the grower and the pathologist have to deal with. Recognising that the latter has still much to learn before he can advise cultivators effectively on the procedure to be adopted to prevent or cure plant diseases, Professor Westerdijk looks forward to a time when seedsmen will guarantee seed as free from specific pathogenic organisms, but she recognises that in the present lack of knowledge as to the best and surest methods of treatment, it is impossible for seedsmen to attempt anything of the kind. Much research will be necessary before the knowledge on which successful seed-sterilization is based is available for practical commercial application. In the meantime we must continue to rely—as we are able to do with confidence—on the general care excercised by good firms in sending out clean seed. Whereas methods of seed-sterilization with respect to Bunt of Wheat and Smut of Oats have been perfected, there are as yet but few cases of successful sterilization of micro-organisms known to be borne on or in seeds. Of such diseases a certain number is known; Anthracnose of Beans and Peas, due respectively to Colletotrichum Lindemuthianum and Ascochyta Pisi; Leaf Disease of Celery due to Septoria Apii; as well as others. The first step to seed-sterilization must, of course, be that of discovering whether spores of the disease-producing organisms are habitually borne on or in the seed, and although this step has been taken in some cases, *e.g.*, those enumerated above, it has not been taken with complete certainty in other suspicious cases, *e.g.*, Hollyhock Rust and the Onion Smut fungus (Urocystis Cepulae). The anthracnose disease of Antirrhinums, for example, due to the fungus Phoma Antirrhini, may be distributed through the seed, it may be a soil disease, or both, but research must be undertaken before it can be ascertained whether seed-sterilization would help to mitigate this troublesome pest. It is the same with respect to the Phoma disease of Phloxes, though in this case the perennial plant is almost certainly reinfected each year from the soil, and this also is probably true of the Phoma disease of Lavender. Many substances are known which sterilize the surface of seeds, but flower and vegetable seeds are delicate things and it is no good using agents which damage seed as well as parasites. For instance, formalin is a good sterilizing agent, but it damages some seeds. In the case of Celery-leaf disease, heating to 48° C. (118° F) has been found not to affect germination and to destroy the spores which are harbouring in the seed. Thus in this case propagation of the disease by sowing infected seed may be prevented. The author suggests that the hot-water method of treating bulbs (Narcissi, etc.) for eelworm may prove of more general use and that by this means a remedy may perhaps be found for the spot disease of Gladiolus, due to a species of Septoria and of the rhizome diseases of Paeony and Lily-of-the-Valley. As to soil sterilization on a large scale, cheaper methods are much wanted. In a season like the present one the cultivator surveying the poor seed boxes of Stocks and observing the large amount of damping-off of the seedlings must regret that he did not risk applying the method of partial soil sterilization by heating the soil previous to seed sowing either in the furnace or with hot water. This has been practised with success in the cases of cuttings of Begonias and Carnations, and seedlings of Stocks, Calceolaria, Zinnia and other flowers which are apt to damp off in the ordinary seed bed. It is now known that soils as well as plants may suffer from disease and both, in consequence, may become sick. The symptoms in the case of soil are that the ground will no longer grow a certain crop; in the case of plants the variety gradually grows weaker and weaker, producing progressively smaller crops. Thus the running-out of varieties of Potatos is to be attributed wholly or in major part to the continued maleficent activity of Mosaic disease. In some cases varieties exist which resist the attack of soil micro-organisms and this fact has led to research which has produced varieties resistant to a given disease. Much more work along these lines is wanted, particularly with reference to Tomatos, Cucumbers, Sweet Peas, Asters, Roses and other plants prone to suffer from this or that disease. In view of the number of and difficulty of the problems which await solution, all cognizant with the facts will agree with Prof. Westerdijk's observation that "we need pathologists working in the borderland between pathology and genetics and that we need pathologists with a gardener's eye."

Our Supplementary Plate.—Although by no means new the flowering shrub figured in the Supplementary Plate presented with our present issue is certainly not commonly grown in gardens. A native of Spain, Erinacea pungens appears to have been introduced to cultivation in this country in 1759. It is a low-growing, rounded, spiny shrub and under favourable conditions it produces an abundance of blue flowers in April and May. It is a lover of warmth and sunshine and at the Cambridge Botanic Gardens it thrives near the foot of a sunny wall where it flowers quite freely each year. Mr. W. J. Bean in *Trees and Shrubs Hardy in the British Isles* states that the species "does not suffer from frost at Kew, but thrives better in the west of England. In the vicarage garden at Bitton it forms low, dense tufts of spiny stems, occasionally perfecting seeds." The last point is interesting, in view of the description which accompanies t. 676 of the *Bot. Mag.* (1803), and reads as follows: "A native of Valencia and Morocco. We can sympathise with Clusius in the sensations he must have experienced, on first discovering this truly elegant little shrub, at that time totally unknown to every other botanist. The finding his little beauty, armed at all points against his invading gripe, whilst it deferred his possession, must have prolonged his pleasure, and added to the value of his prize; well might he exultingly style it *plane nova et tota elegans.* Clusius gave it the name of Erinacea from the vulgar appellation of the inhabitants, Erizo, which signifies a hedge-hog. Linnaeus considered it as a species of Anthyllis, with which it agrees in the form of its flower, but in habit is certainly widely different from the most of its congeners. It is a greenhouse plant and can be propagated we believe only by seeds, which it produces very sparingly, even in its native country; neither Clusius nor Desfontaines could find any. This may account for its still being a rare plant, though cultivated by Miller in the year 1759. Prof. Martyn, from De la Billardiere, speaks of it as growing to the height of nine or ten feet, which must surely be a mistake, perhaps of feet for inches."

Clyde Orchards.—A fine display of blossom in the Lanarkshire orchards has been followed by average, or under average crops. In common with other parts of the country, Plums are a light crop. Apples and Pears flowered exceptionally well, but the crop of Pears is a meagre one. The area under Apples and Pears remains unchanged. Raspberries and Currants are not largely grown commercially in the Clyde valley. Strawberries were an average crop, and this fruit is most extensively cultivated; indeed Strawberry cultivation has increased enormously of late years and bordering the Clyde from Garrion Bridge to Kirkfieldbank, there are miles of Strawberry fields. On the north bank of the Clyde are extensive Plum orchards, the variety Victoria predominating. The failure of the Plum crop is attributed to the severe aphis attacks last year. In the Carluke district one may travel for miles along roads bordered with Plum trees. There is a considerable acreage under small fruits at Lanark Braes, Blackwood and Lesmahagow. Clyde orchards have been famed for centuries; they are mentioned by the Venerable Bede, and Merlin, the pagan bard, sang of the "Apple Yards of Lanerk."

---

* Copy of Report may be had on application to Dr. M. J. Sirks, Secretary of the Congress, Wageningen. Price 4 guilders (Dutch).

Many writers have remarked upon their foreign aspect. Dorothy Wordsworth in her journal writes of their "French face." Neil Munro likens them to Normandy, where the Seine lags under orchard trees between Rouen and Andelys. Well placed as regards a market, the orchards are near the mining villages and industrial towns of Lanarkshire, extending to within a few miles of Glasgow, and with the Clyde coast resorts within easy reach. The motor lorry has revolutionised the dispatch and distribution of small fruits. Loaded in the orchard with the pick of the fruit packed in non-returnable baskets, each containing several pounds of fruit, these are delivered at their destination within a few hours of gathering, the bulk going to the jam factories. Tomato culture is on the increase in the Clyde valley; thousands of feet of additional glass houses are erected each year and at the height of the season from thirty to forty tons of Tomatos are handled daily in the Glasgow wholesale market.

Public Rose Garden for London.—At a meeting of the Royal Botanic Society on June 26, Mr. W. C. Daniels, a Fellow of the Society, offered to present the Society with the necessary Rose plants to form a Rose garden in the Botanic Gardens in November next and the offer has been accepted on behalf of the Council.

Leaf-Mould.—Prof. J. B. Farmer makes some observations on the formation of leaf-mould in *Nature* of July 19. He points out that in certain woods and copses there is a more or less thick deposit of leaf-mould, whilst in others this material is absent and that the presence or absence is not because of absence of the necessary trees, such as Oak or Beech, but depends on the character of the surface soil. He states that sand or gravel promotes, whilst heavy and especially calcareous soils inhibit, the formation of leaf-mould. The absence of leaf-mould in places where it might be expected to form he attributes to bacterial action, bacteria carrying out the disintegration process, mainly to carbon dioxide and water, in the presence of the available calcium carbonate of the surface soil. In silicious "acid" top soil, the bacterial activity is arrested and thus the requisite condition for leaf-mould formation is provided, as such an acid soil would not neutralise the products of bacterial action. He points to examples where a covering of sandy gravel soil in a hollow in a wood was followed by the formation of excellent leaf-mould, although adjacent hollows without the sandy gravel covering contained no leaf-mould. Prof. Farmer also states that soil drainage influences the process.

Southport Flower Show.—Since the publication of the schedule of the flower show to be held at Victoria Park, Southport, on August 27, 28 and 29, the exhibition authorities have received several offers of handsome prizes in addition to the fourteen silver trophies already notified. The additional offers include a Silver Challenge Trophy, valued £50, to be awarded to the most meritorious competitive exhibit in the show, from Sir John Brunner, M.P.; a Silver Challenge Trophy, valued £10, presented by James P. Rudolf, Esq., for the best collection of perpetual-flowering Carnations; *The Gardeners' Chronicle* silver-gilt Medal to be awarded for the best amateur exhibit of vegetables; and a Kodak camera offered by Councillor John Brook for the best arrangement of wild flowers, Ferns, fruits and grasses in a class open to scholars attending Southport elementary schools. A Silver Challenge Trophy, valued £15 15s. and offered by the Southport Branch of the United Commercial Travellers' Association has necessitated the institution of a new open-to-all class, for a representative group of cut Roses in a space twenty feet by four feet. The trophy will be in addition to a cash first prize of £12; the second prize will be £8 and the third prize, £5, and these cash prizes have been presented by the Southport Opera House and Winter Gardens, Ltd.

Mr. H. Williams, J.P.—When Mr. Harry Williams served his apprenticeship at Tolvean, Redruth, the gardens were famous throughout the West of England for their particularly rich collections of stove and greenhouse plants, which were the pride of their owner, A. Lanyon, Esq. From Tolvean, Mr. Williams went to Trevarno, Helston, the seat of the late Mr. Bickford-Smith, M.P., where he served four years and rose to the position of foreman. In 1894 he entered Kew and served in the arboretum with Mr. W. Dallimore and Mr. W. J. Bean, and later was engaged in the alpine department. He acted as Secretary of the Kew Mutual Improvement Society in 1895 and 1896 and in the latter year left Kew to become general foreman at Heligan, St. Austell, a garden which contained a remarkably fine collection of semi-hardy trees and shrubs. In the following year he took up the position of head gardener to the late E. Beauchamp-Beauchamp, Esq., at Trevince, Gwennap, an estate remarkable for its collection of Conifers, some of which have been illustrated in *The Gardeners' Chronicle*. Ten years later Mr. Williams returned to Tolvean as gardener to his old employer, and although Tolvean is not a large garden it was splendidly equipped and Mr. A. Lanyon was always on the look out for new and remarkable plants. He died in 1915 and was succeeded by his son, Mr. Howard Lanyon, who died in 1922. The estate is now in possession of Mrs. Howard Lanyon, for whom Mr. Williams continues to act. He is lecturer and demonstrator on horticulture to the Cornwall Education Committee and during the war period delivered no fewer than four hundred lectures in the county on gardening and food production. He has won hundreds of prizes for stove and greenhouse plants, as well as hardy subjects and for twenty years contributed the weekly gardening article to the *West Briton*. During a lengthy period he has also been a frequent contributor to *The Gardeners' Chronicle*. In the year 1900 he took first honours and the King's medal in horticulture at the Board of Education and in the following year he won the first bronze medal offered by the Cornwall Polytechnic Society in open competition, for a scientific essay. Early in the present year Mr. Williams was appointed Chairman to the Redruth Urban District Council and Justice of the Peace for Cornwall.

MR. HARRY WILLIAMS, J.P.

Prize for the Best Dahlia Poem.—Through the generosity of Mrs. Charles H. Stout, *The Garden Magazine* (America) is privileged to announce the offer of a $50 cash prize to be awarded for a new and original poem on the Dahlia. Verse submitted in this competition must be of a joyous mood in any lyric form, but not exceeding six stanzas in length. Competition closes October 1st, 1924, and all entries must reach *The Garden Magazine* not later than that day. Contestants may submit any number of entries, with the name and address of the author plainly marked on each one, addressing them to the Dahlia Poem Contest, care of *The Garden Magazine*, Garden City, New York. Three men of letters, themselves poets of distinction, have generously consented to act as judges—Mr. Christopher Morley, Prof. John Erskine of Columbia University, and Mr. Frank Ernest Hill.

British Mycological Society.—The autumn foray of the British Mycological Society will be held at Bettwys-y-Coed, North Wales, from Monday evening, September 22nd, to Saturday, September 27th. The headquarters of the meeting will be at the Royal Oak Hotel.

Appointments for the Ensuing Week.—Monday, August 11: Bath Gardeners' Society's meeting; United Horticultural Benefit and Provident Society's meeting; British Pteridological Society's meeting. Tuesday, August 12: Royal Horticultural Society's Committees meet; Clay Cross Horticultural Society's show; Jersey Gardeners' Society's meeting. Wednesday, August 13; Burton Floral Fete; Lytham St. Annes and District Agricultural and Horticultural Society's show; Watford Horticultural Society's show; Sheffield Chrysanthemum Society's meeting; East Anglian Horticultural Society's show. Thursday, August 14: Scottish National Sweet Pea, Rose and Carnation Society's show at Aberdeen, in conjunction with the Royal Horticultural Society of Aberdeen's show (3 days). Friday, August 15: Huddersfield and District Horticultural Society's show(2 days); Blairgowrie Flower Show; Brechin Flower Show; Cupar Fife Flower Show; Perth Flower Show (2 days); Dalbeattie Flower Show; Saturday, August 16: Alyth Flower Show; Dumbartonshire Sweet Pea Show at Helensburgh; Granthouse (Berwickshire) Flower Show; Fossoway Flower Show; Burntisland Flower Show.

"Gardeners' Chronicle" Seventy-five Years ago.—*Lagerstroemia indica.* This very beautiful stove plant is so seldom seen in perfection that I am induced to send an account of one we now have in bloom. It stands about nine feet high, measures about six feet through the centre, and has about 150 spikes of delicate purplish-lilac flowers fully expanded; some of the spikes are nine inches to one foot long, and as they hang in graceful semi-pendulous carlessness, they present an aggregate of beauty seldom witnessed. Lagerstroemia indica is a free bloomer, under judicious treatment. I have bloomed plants of about eighteen inches high, but they should be three or four years old. They require to be wintered in a cool house, and started in a plant stove early in spring, after pruning them in hard, reducing the old ball, and potting them in a mixture of sandy loam and well rotted dung or leaf-mould. When in bloom they may be removed to the conservatory, and will last a month. A little manure-water will assist them very much after they show flower.—*T. Ann, Gardener to J. D. Llewelyn, Esq., Penllergare. Gard. Chron., August* 11, 1849.

Publications Received.—*Dominion Experimental Farms; Canadian Dairying; Canadian Wheat and Wheat Flour; Canadian Live Stock and Meat Industries; Canadian Fruit, Vegetables and Honey.* Obtainable free on application to the Canadian Government Exhibition Commission, Canadian Pavilion, Wembley Park.

ORCHID NOTES AND GLEANINGS.

CATTLEYA APHRODITE.

By crossing their showy Cattleya Alexandra, of 1916 (Carmen × Hardyana) with Cattleya F. W. Wigan (Dowiana × Schilleriana), Messrs. Flory and Black have produced an interesting hybrid, C. Aphrodite, which has now flowered. The sepals and petals are bright mauve-purple, and the lip intense violet-purple, the deeply cleft and erect side lobes being coloured like the broadly expanded front, and the disc yellow. The distinct arrangement of the lip and the firm substance of the flower plainly show the influence of C. Schilleriana in the Cattleya F. W. Wigan parent, which the larger proportion of the C. labiata section has only succeeded in modifying.

LAELIO-CATTLEYA MAISIE.

The first flower of this new cross between L-C. H. T. Pitt (C. Enid × L-C. Bella) and C. Hardyana, from the raisers, Messrs. Flory and Black, Slough, shows a very pretty, and brightly coloured hybrid with distinct features. The sepals and petals are mauve with white midribs on the inner half. The lip, which is shaped like that of C. Warscewiczii, but with a rounder front lobe, is ruby-purple, with a small yellow spot on each side of the middle half, a feature which C. Warscewiczii generally imparts when represented strongly in the ancestry. In form it is nearer the L-C. H. T. Pitt, which was one of Messrs. Flory and Black's productions of 1919.

CATTLEYA MONA.

A grand, two-flowered inflorescence of a valuable new addition to the true Cattleyas is sent by the raisers, Messrs. Cowan and Co., Southgate. It resulted from a cross between C. Regina (Dupreana × labiata) and C. Dowiana aurea. It is an ideal flower in its class, being large, finely formed, brightly coloured and delicately fragrant.

C. Warneri and C. Warscewiczii in the parentage of C. Dupreana are obvious in this new hybrid, the colour and the broad lip well indicating the finest type of C. Warneri. The sepals and petals are bright rosy-mauve with white mid-ribs at the base. The lip is deep ruby-crimson in front, the disc being chrome-yellow, lines of the same colour on a purple ground running from the base to the centre. The side lobes of the lip are coloured like the petals and the column is white. *J. O'B.*

CYPRIPEDIUM SPECTABILE.

I do not think that the well-known name of Cypripedium spectabile, by which the Mocassin Flower is generally known, is ever likely to be superseded by the prior one of C. hirsutum, given to it in 1768 by Miller, previous to its being named C. Reginae, dating from 1788. Salisbury's name of C. spectabile is still likely to be retained in gardens.

I am impelled to write a few notes upon the plant from the fact that, frequently as one may see it exhibited at such shows as that of Chelsea, it is rare in gardens. The fact is that of the hosts of specimens planted annually only a comparatively few become established, and the percentage of losses appears to be quite equal to or even surpassing that of Lilium auratum in the open in many gardens. Where it becomes a permanent inhabitant, it is an exquisite flower, admitting of no superior in the race. Recently I saw again, after long years, a good plant in a rock garden which I had not revisited for a considerable time. Here the Mocassin Flower, which had been planted there for very many years, was healthy and happy, forming a good clump and giving a goodly number of its exquisite rose and white flowers, which were justly the joy of lovers of floral beauty. It was in a warm situation, but sheltered from strong sun by adjacent trees and shrubs. The plant was growing in moist, peaty soil with a shallow surfacing of gravel above—not a common surfacing for a bog plant, but one which did not appear to be in the least injurious to it. Here, undisturbed at the root, C. spectabile flowers freely annually and has done so for a long succession of years. Much has been written regarding its requirements, but the main thing is that it should have an open, free soil of a light nature for at least six inches or a little more, so that its matted, almost surface roots may enjoy what they desire.

In many cases the Mocassin Flower is planted too deeply and often with loam too thickly laid over the roots, in which case it almost invariably, perishes. In the garden I am referring to the coating of gravel was a mere surface one and had the effect of keeping the soil below cool and preventing it from drying up. I do not venture to assert that a similar treatment will succeed everywhere. That is too much to say in the case of many plants, but there is no doubt that the losses of plants of C. spectabile are almost stupendous and a record of success may help to surmount the difficulties which nullify the efforts of so many who try to grow this lovely flower. *S. Arnott.*

THE ROSE GARDEN.

ROSE MRS. HENRY MORSE.

Amongst the newer Roses of recent years, the variety Mrs. Henry Morse (Fig 31), which obtained a Gold Medal of the National Rose Society in August, 1919, occupies a high position, for it has all the qualities of a good Rose, and is suitable alike for exhibitions and for garden decoration.

Those who have cultivated this beautiful Rose are loud in their praises of it for massing in beds, but it is liable to be attacked by mildew, which may, however, be prevented if the trouble is taken to spray the plants with a mildew specific.

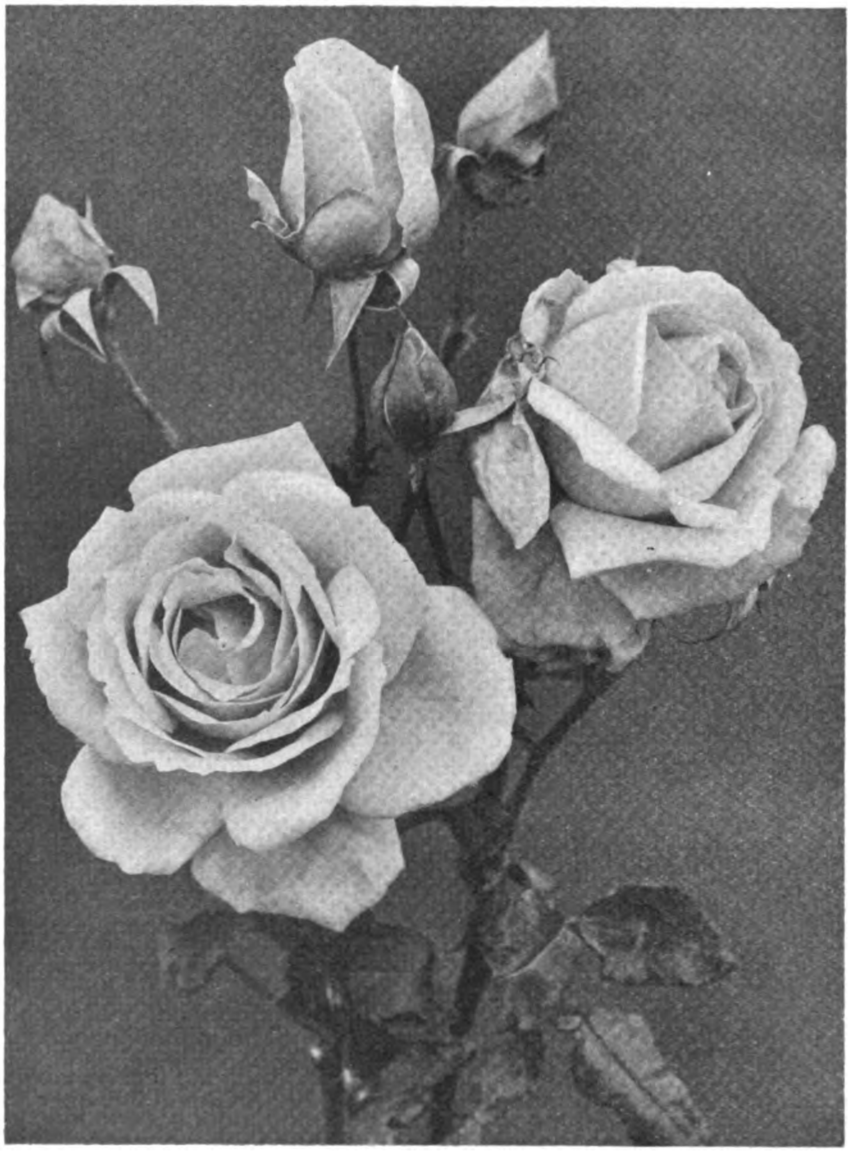


FIG 31.—ROSE MRS. HENRY MORSE.

The colouring of this Rose is delightful—a bright rose suffused with deep vermilion—and in addition to its fine colouring, the bloom is sweetly fragrant. It was raised by Messrs. Samuel McGredy and Son, who state that they have "never raised or sent out a Rose with a feeling of greater pride than we do in offering this wonderful novelty to the Rose-loving world." The variety has been seen in many collections at exhibitions this season and wherever shown it has always attracted much attention from the Rose-loving public.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Sobralias.—As a general rule the flowering season of Sobralias is from the middle of June to the end of July. When the plants have ceased flowering, they may, if necessary, be re-potted. Any that show signs of exhaustion by making smaller stems than formerly, should be afforded a larger pot and fresh rooting materials. They are vigorous, easily grown subjects, which produce a large number of thick, fleshy roots, therefore they should be grown in a retentive rooting-medium, consisting of a mixture of good fibrous loam and peat, with a sprinkling of crushed crocks added to render the mixture porous. Specimens that do not require disturbance may be assisted by watering them at intervals, while they are growing freely, with weak liquid cow manure. Sobralias thrive well when grown in a cool, intermediate temperature. Established plants need plenty of water at the roots during the summer months, and even in winter a moderate amount of moisture is required, as they have no decided resting season. It is not advisable to unduly disturb the ball of the plant when re-potting it or to divide the plant into several pieces, as they take a long time to recover. A better plan is to propagate pieces at intervals, and grow them on to take the place of specimens which have become too big or stemless in the centres. They should be syringed freely on all favourable occasions, taking care to wet the undersides of the leaves in order to ward off attacks of red spider.

Laelia pumila.—This small, cool-growing Laelia is making new growth, and as young roots develop from the base of the plant they should be re-potted or have fresh materials applied at the surface. These plants require liberal supplies of water at the roots during their growing season, therefore it is important that the compost should be sweet and in a porous condition. Shallow pans without side holes, with wires attached for suspending them, are suitable receptacles, and these should be well drained. Use only a thin layer of Osmunda fibre and Sphagnum-moss cut up into rather short portions. The materials should be pressed rather firmly round the base of the plants and a few live heads of Sphagnum-moss pricked in over the surface. For a short time after re-potting water should be sprinkled over the surface only, but when the young roots have become well established in the new compost, the plants should be dipped in tepid rain water each time the soil becomes dry, and sprayed overhead whenever the weather is favourable. This treatment should be continued until after the plants have passed out of flower, when they should be kept slightly on the dry side throughout their resting season.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Hydrangea Hortensia.—Few plants grown as specimens in tubs are more effective than Hydrangeas and no plants look better on terraces or at the top of a flight of steps. Cuttings of flowerless growths should be taken now. They should be inserted singly in small pots in a sandy compost and placed in a closed case in a warm house until rooted, when they may be transferred to a cool house and grown on near the roof-glass. These plants produce single heads of flower in the first year and are very valuable for furnishing small pockets, etc., after which they may be planted in tubs to make up specimens for replacing worn-out ones.

Pansies.—The production of Pansy plants which flower in early spring is very desirable and the flowers borne by these plants are always larger than those from plants raised in the spring, as the latter have to endure the drought of summer, which is so inimical to the Pansy. If seeds have not already been sown or if earlier sowings have failed, there is still time to make a sowing on a well-prepared seed-bed. Transplant the seedlings into firm, rich soil so soon as they can be handled; give them ample room for their development and they will make strong specimens full of buds before winter. If these plants are lifted carefully with good balls and planted in their flowering positions so soon as the beds are available they will commence to flower in the early days of spring

Dahlias.—Although the modern Dahlia is a much earlier flowering plant than its progenitors of two or three decades ago, its great use is still for late summer and autumn effects, and few subjects give such a varied and brilliant display over so long a period. To keep the Dahlias in perfect condition, however, constant attention is necessary. They are moisture-loving plants and during periods of dry weather copious supplies of water should be given at frequent intervals. See that the shoots are well staked and tied as they develop, as the heavy foliage needs to be well supported against autumn winds; damage may result from a single wind storm if this is neglected. Remove all flowers as they fade so that the whole energy of the plant may be thrown into developing new growth and flowers until the end of the season.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough. Leicestershire.

Raspberries.—So soon as all the berries are gathered, the old canes should be cut down to the ground, and the young ones which will bear fruit next year be tied in. Where there is plenty of new growths, select the best and tie these to wires about one foot apart, pulling the weaker canes out by the roots and discarding them with the old canes. When all are tied in, weed the rows, if necessary, and apply a good mulch of well-decayed manure in order to conserve the soil moisture; the autumn rains will wash the nourishment to the roots. The variety Lloyd George is a robust grower and needs plenty of space. The berries are large, of splendid flavour and produced in great abundance. The Devon is also a good variety, a strong grower, and the berries are of fine flavour. Autumn-fruiting varieties should be kept tied in, superfluous growths removed, and a good mulch of manure placed over the roots. Both the red and yellow sorts will give an abundance of fruits on into November, especially if the weather is fine and dry.

Strawberries.—The ground intended for new Strawberry plantations should be raked over and made firm by treading. So soon as the young plants are sufficiently rooted, turn them out of their pots and separate the roots carefully before planting, in order that they become established quickly. Allow a space of two feet between the rows—or thirty inches for the larger-leaved varieties, and eighteen inches from plant to plant. Plant the runners carefully by means of a trowel, spreading the roots out as much as possible and watering each row as the work proceeds. When all are planted, rake the bed over to give it a neat appearance, and for a few weeks afterwards keep the soil stirred with the Dutch hoe to keep down weeds and encourage the plants to grow and form good crowns. If the weather is dry, do not fail to give the roots plenty of water. The stronger the plants grow before the winter the better will the crop be next season. Plants that have been forced may also be put out now if desired, following the same method as advised for the young runners.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Early Pot Vines.—Vines intended for early forcing next season should, by this date, have completed their growth. When they have been sufficiently hardened by admitting plenty of fresh air for a week or ten days they should be stood out-of-doors in a sheltered position fully exposed to the sun, choosing a time, if possible, for their removal when the weather is somewhat dull. The vines should be made secure to strong stakes or wires as a precaution against damage by strong winds. To prevent the soil drying quickly the receptacles should be partially mulched with short manure, as on no account should the roots be allowed to suffer through lack of moisture. When it is noticed that the wood has assumed that ripened appearance which betokens perfect maturity, the laterals may be removed, commencing at the bottom of the rod and working upwards, but retaining two or three laterals near the top and allowing them to grow at will; these if carefully preserved will prevent the lower buds from breaking prematurely. Vines raised from eyes this season and intended for planting next spring may have all laterals removed with the exception of two or three near the top, allowing these to grow unchecked.

Pears.—Pear fruits on trees growing in borders in the orchard house require supporting or in all probability their weight will cause them to break off with the spur to the great disappointment of the grower. To be sure of obtaining the maximum of the crop, all fruits should be made secure by tying a strand of bast around each stalk and looping it to the wires or to the stem of the tree. Continue to pinch out all sub-laterals at the second leaf, and see that the borders are well supplied with water. When the fruits are approaching ripeness the ventilators should be covered with a fine mesh netting to keep out Tits, which are very troublesome in some localities.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Bulbs.—On p. 56, I referred to the importance of sending the bulb order early. Having ordered the bulbs it will be well to make all possible preparations towards the potting of those which will be required to flower early, so soon as they come to hand. Much may be done in this direction in mixing the composts, preparation of pots, the securing of plunging materials, etc. A matter of great importance also is that the bulbs should be unpacked immediately they arrive and turned out of the bags or boxes containing them. Fruit trays or shallow boxes in which the bulbs should be laid thinly, may be used for temporary storage, and at this time of year space in the fruit room is generally available. Whether a large or small quantity of bulbs has to be handled it will be well to prepare enough soil at one time to provide for the needs of the whole. For Hyacinths and Tulips a fairly rich compost may be prepared, comprising two parts of loam, one part of leaf-soil, and one part of old hot-bed or spent mushroom-bed manure, with the addition of fine charcoal and coarse silver sand. For Daffodils and Narcissi generally, a larger proportion of loam should be used, but no organic manure, with a corresponding increase of materials which will ensure the soil being porous. I am of opinion that an advantage is to be gained by the mixing of all potting composts a week or two in advance of use, and especially if the heaps are turned every few days. Bulbs should be potted firmly, but this can be accomplished without the aid of a potting stick or rammer. As a plunging material there is nothing better than granulated peat moss litter, which is inexpensive and may be obtained from horticultural sundriesman.

Correction.—In my notes under date July 26, "Feeding of Chrysanthemums," an error occurred. The paragraph should read: "After this a course of weak, clear soot-water, applied daily for a week to those plants requiring water, is a safe and effective liquid stimulant to start with. I prefer this method of using soot-water, *then* to withhold it altogether for three weeks, rather than to apply it oftener and irregularly."

THE KITCHEN GARDEN.

By WALTER Y. STAWARD, Gardener to Mrs. JOHN FEENEY,
The Moat, Berkswell, Warwickshire.

Autumn Onions.—Ground should be prepared to receive the seeds of winter Onions. It should be well dug, enriched with plenty of farmyard manure and made very firm by treading. Rake the surface level and scatter plenty of wood ash over the surface. Before levelling the soil sow the seeds in shallow drills made 12 inches to 14 inches apart. Ailsa Craig, Cranston's Excelsior, Giant Rocca, Blood Red, and Silver Skin are all hardy varieties. It is advisable to make two sowings, one about the 12th August and another two weeks later, but the best time for sowing depends in a large measure on the district, for if the seeds are sown too early in some parts the plants will run to seed the following year. Local experience is the best guide when to sow.

Early Cabbage.—A sowing of early Cabbage should be made now, selecting reliable varieties such as Emperor, Flower of Spring, and Harbinger. Make another sowing two weeks later for succession.

Beetroot.—Late-sown Beets will require attention in thinning the plants, and working the hoe along the rows to check young weeds. Dusting the ground with soot will be beneficial in warding off slugs which, as a rule attack the best roots.

Late Broccoli.—Late Broccoli plants should be set out in their permanent quarters during showery weather. If the ground is dry make holes with an iron bar, fill them with water, and then place the roots in the holes. Give the plants another soaking with water after they are planted. Use the hoe freely between the plants after they are established, to keep weeds in check.

Cardoons.—The plants are ready for placing a further quantity of soil around them. This operation should be done when the foliage is dry and the ground works freely.

Seed Sowing.—Further sowings of Lettuce, Radish, and Endive should be made for successional crops. The plants of previous sowings will be ready to handle, and if plenty of frames are available they may be set in frames containing a fair depth of soil. Shade the plants from bright sunshine for a few days, then expose them to the sun. Sprinkle them overhead in the late afternoon in dry weather to ensure quick growth.

INDOOR PLANTS.

CYRTANTHUS.

In the issue of July 26 in the note on Cape Bulbs—reprinted from the *Gardeners' Chronicle* of seventy-five years ago—that grand old gardener, Donald Beaton, displayed his vast knowledge of the subject and the keen interest which he took in plants generally. His theme was the possibility of seeding and crossing the Cyrtanthi with Vallota purpurea and other Amaryllids, and he mentions Gastronema clavatum, Herb., *Bot. Mag.*, t. 2291, which he had not succeeded in blooming, as a desirable agent. The section Gastronema, Herb., is now made a sub-genus of Cyrtanthus, the G. clavatum mentioned being identified with Cyrtanthus uniflorus, Gawl, in *Bot. Reg.* t. 168.

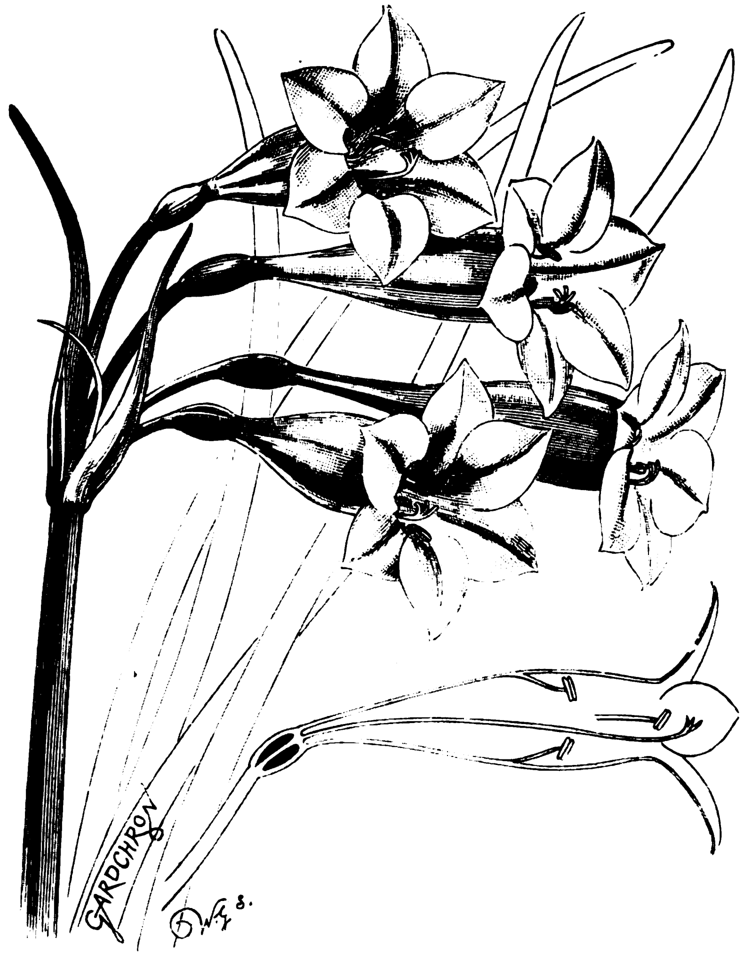


FIG. 32.—CYRTANTHUS HELICTUS.

Other species of the section which have from time to time appeared in gardens are C. helictus (see fig. 32), which has flowers resembling those of C. uniflorus—white blooms with some purplish lines; C. Smithianus, a species also allied to the preceding, and C. sanguineus, Hook, *Bot. Mag.* t. 5218 (syn. Gastronema sanguineum, Lindl.) which has been at times tolerably plentiful in gardens. The type has showy bright-red flowers, but the variety flammeus has flowers of a salmon-pink tint.

It is interesting to note that the hope of the writer of seventy-five years ago has been realised and the cross between Vallota purpurea and C. sanguineus was flowered in the gardens of the late Sir Trevor Lawrence in 1885, and two varieties of the hybrid received the R.H.S. First Class Certificate, being recorded as Cyrtanthus hybridus, N. E. Brown in *Gard. Chron.*, 1885, p. 391.

There is no doubt that all the species of this pretty section of Cyrtanthus have been imported frequently, and it is equally certain that they soon vanished from gardens, until now, with the exception of C. sanguineus, but few can be found in cultivation.

Some years ago I imported and grew small lots of most of the species, and especially C. sanguineus and its variety flammeus, of which latter I raised about two hundred plants from seed set with its own pollen. I do not remember ever losing a bulb of Cyrtanthus and I think the mortality must come from wrong treatment generally, or at some period in the year. The chief errors in the cultivation of these bulbous plants are using pots of too large a size, excessively heavy soil, and too much water when there are no active roots. Sunlight is life to the Gastronemas and they and most other South African bulbs cannot thrive without it. A shelf near the glass of the roof in a greenhouse where a temperature of about 45° F. is maintained in winter suits them well, but water should be withheld during cold weather.

My experience is that the best results can be attained by using comparatively small pots with good drainage, the base of the bulb being kept just above the crocks and the bulb covered to the neck with the potting material, the most suitable rooting-medium being sandy peat. No water should be given to freshly imported bulbs or those in an inactive condition until there is positive evidence of root-action. Careful watering is essential and over-watering accounts for the sudden decay of these Cape bulbs when they are grown in a mixed collection of plants. It is not easy to imitate the South African veldt conditions in British gardens, but some approach can be made by growing the plant in pure air and the fullest exposure to sunlight that our climate admits. The best method of retaining these Cyrtanthi in gardens is to raise plants from seeds, for home-raised seedlings of any class of plants are more manageable than imported specimens. *J. O'Brien.*

HARDY FLOWER BORDER.

CAMPANULA VAN HOUTTEI.

In an all-too-brief visit to the garden of Father Douglas-Dick, St. Mary's, Nowabbey, Kikeudbrightshire, I came upon a superb plant of the fine Campanula Van Houttei, now an old plant, occasionally, but not too frequently, seen in gardens of hardy flowers. I do not think that I have ever seen a finer specimen than the one at St. Mary's, for it was taller than usual, of remarkably healthy growth and had developed an abundance of its long, most ornamental, wax-like, creamy-pink bells that are dotted inside with pink. It was a favourite plant of mine long ago, and I was pleased to come across such a superb specimen.

The origin of C. Van Houttei is evidently a matter of some mystery, although it was probably sent out from the famous nursery of Messrs. Van Houtte, Ghent. Some consider that it is a hybrid between C. punctata and C. latifolia and others consider it a natural superior variety of C. punctata itself. Be this as it may, the plant is a capital border Bellflower, growing generally about one foot high, but sometimes considerably more.

POLEMONIUM CAERULEUM VARIEGATUM.

The variegated-leaved Jacob's Ladder was at one time planted freely in gardens, but it seems to be nearly forgotten in many districts. It is, however, valuable in its own way, and where bedding plants are employed it may frequently be utilised with advantage. Long ago, when the flowers of bedding Begonias were not very large I saw a pretty bed composed of scarlet Begonias with an edging of Polemonium caeruleum variegatum. The effect was exceedingly good, the soft silvery appearance of the Jacob's Ladder, with its elegant leaves of silver and green, showing off the scarlet Begonias to advantage. Even as a border or large rock garden plant, I have seen it used with some gain when discretion was exercised in planting it. It grows freely in ordinary soil, and may be propagated by division, every piece with a root or two growing if detached in spring or early autumn. It should be noted that the flowers must be kept pinched off or the variegation will be less bright and in some leaves will disappear for the time. The variegated form does not bloom so freely as the typical green-leaved, blue-flowered plant. *S. Arnott.*

BOG GARDEN.

PINGUICULAS.

Pinguicula grandiflora is the most showy of the hardy Butterworts. A native of the bogs in Co. Cork, it is a handsome plant for the bog, or a moist cool spot in the rock garden. The solitary flowers are one inch across; they are violet coloured and form a brilliant contrast to the rosette of light green leaves. The foliage dies away in winter, fresh leaves developing in spring.

P. vulgaris is a common plant on the lower slopes of some of the Highland hills, sheeting them with vivid purple, drooping flowers. The fleshy leaves are densely glandular, forming a rosette three inches to four inches in diameter. The leaves were formerly used to coagulate milk, hence the name, Butterwort.

P. lusitanica is a strictly western plant, small and insignificant, yet interesting, as being a survival of the flora which flourished in the bogs now submerged off the western coast. Its flowers are lilac, tinged with yellow, and the plant grows to a height of about six inches.

P. alpina, a sub-Arctic herb has a short spur curved upwards. The flowers of this species are white, with a tuft of deep yellow, crystalline hairs within on the under side of the corolla.

The Mexican P. caudata is a greenhouse plant reputed to be a somewhat capricous subject, an obstinate doer in some places, in other places growing like a weed, self-sown seedlings springing up in the gravel of the staging in the cool Odontoglossum house and flowering profusely. It also grows well under warmer conditions. The deep carmine flowers with a conspicuous "tail" are borne on erect, leafless scapes. Strong plants in five-inch pots, with the flat, fleshy leaves overlapping the edge of the pot flower freely, This species requires to be grown in a compost of peat, Sphagnum moss and crushed crocks, and in uniformly moist conditions. *Fred W. Jeffery, Langside, Glasgow.*

NEW AND RARE VARIETIES OF NATIVE FERNS.

At the recent exhibition of the Royal Horticultural Society of Ireland, at Dublin, the silver-gilt medal presented by the *Gardeners' Chronicle* for the best amateur exhibit of new or rare plants or flowers was won by the Rev. Canon Kingsmill Moore with a remarkable group of hardy native Ferns.

This exhibit was striking in every way, and reminiscent of the excellent exhibits of Ferns seen in former days, but which, for some reason, have now become rare. At most of the leading shows groups of Ferns are arranged by trade growers only and very excellent they are.

It is pleasant to note, however, that there are still amateurs who not only have good collections of hardy Ferns, but who are able to exhibit a group of well-grown healthy and choice hardy Ferns like those shown by Canon Kingsmill Moore. A further point of interest is that out of the twenty-two plants shown, no fewer than nine were raised by Canon Kingsmill Moore; and of these nine, three, Polystichum angulare venustum, P. a. falcato pinnulum and Athyrium Filix-foemina cruciato-cristatum baccatum have received the certificate of the British Pteridological Society as not only new, but better than any of their kind known.

Connoisseurs of Ferns considered No. 6 (Polystichum angulare venustum plenum) to be the most distinct. It is a remarkable form as the finely cut and beautiful feathering is not only on the upper side of the frond, but extends to the lower side, giving wonderful substance and depth to the frond, without in any way detracting from its grace and beauty. This variety has not yet been placed before the B.P.S. for an award.

Lovers of hardy Ferns may like to see the list of names of this remarkable group:—

Polystichum angulare vars.: (1), plumosum laxum (Fox); (2), plumosum (Espland); (3), plumosum (Drummond): (4), p. acutum densum; (5), p. venustum; (6), p. venustum plenum; (7), p. perspicuum; (8), p. digitatum pulchrum; (9), p. falcato pinnulum; (10), p. foliosum (Dr. Stansfield); and (11), p. medio deficiens.

Polystichum aculeatum vars.: (12), P. a. gracillimum (Cranfield).

Athyrium Filix-foemina vars.: (13), Victoriae nanum: (14), cruciato cristatum baccatum; (15), kalothrix cristatum; (16), plumosum superbum (Druery); (17), p. percristatum (Druery); and (18) p. clarissima.

Asplenium Trichomanes var.: (19), Clemantii.

Polypodium Dryopteris var.: (20), plumosum.

Scolopendrium vulgare vars:—(21) concavo capitatum; and (22), S. v. equilaterae; this last is the only Fern in the group that was found wild. *W. P. M., Dublin.*

TREES AND SHRUBS.

CATAWBIENSE HYBRID RHODODENDRONS.

The first of the so-called Catawbiense Hybrids was raised in England in 1826, between Rhododendron catawbiense and R. arboreum and was named R. alto-clerense. It is considered doubtful if this plant is still in existence. There are forty-eight varieties of the Catawbiense Hybrids growing in the Arnold Arboretum, raised at Knaphill Nursery, Woking, Surrey, England, by Anthony Waterer, who by his exhibit at the Centennial Exhibition in Philadelphia did more to make these plants known in America than anyone else. From the *Bulletin* of the Arnold Arboretum (vol. X, 9) we learn that at this exhibition fifteen hundred plants in eighty varieties were arranged under the general charge of Mr. Anthony Waterer himself who came to America for that purpose. Most of these plants were presented to Professor Sargent, and a large part of his visit was passed in Boston where he learned that it is as easy to acquire a serious attack of gout in New England. as it is in England.

Twelve varieties recommended by the Arboretum, where they have been growing uninjured for about thirty years, are: H. W. Sargent (crimson), album elegans, album grandiflorum, Catawbiense album (white), James Mackintosh (red), Mrs. C. S. Sargent (rose), purpureum grandiflorum (dark purple), roseum elegans (rose pink), Henrietta Sargent (rose), Charles Dickens (bright red), Everestianum (rosy lilac), and atrosanguineum (dark red).

OSMANTHUS DELAVAYI.

This is an attractive spring-flowering, hardy, evergreen shrub of recent introduction, compact in habit, with hard, dark green, ovate, dentate leaves. Small plants flower freely, every growth terminating within a cluster of fragrant, white, Bouvardia-like flowers of much substance, and the blooms remain in good condition over a long period.

A group of Osmanthus Delavayi in the rock garden at Inverleith has been a conspicuous feature this summer. As a bush in the open it usually grows about three feet high; trained on a wall it will reach six feet. While not fastidious as regards soil or situation it succeeds best in a warm, well-drained soil, and sheltered position. *Fred. W. Jeffery, Woodside, Dalserf.*

DEUTZIAS IN THE ARNOLD ARBORETUM.

It is with regret we learn from the *Bulletin* of the Arnold Arboretum that if all the species and hybrids of Deutzias are considered this genus is not a great success in Massachusetts where many of the plants are not hardy and others only flourish in exceptionally sheltered and favoured positions. Much attention has been paid to hybridizing species of this genus, and probably the most useful Duetzia for this part of the world is a hybrid between the Japanese D. gracilis and the Chinese D. parviflora. Deutzia gracilis is a dwarf shrub with pure white flowers in erect or spreading racemes. This is an old and popular garden plant better worth growing in the southern and middle states, however, than it is in Massachusetts where the ends of the branches are often more or less killed. D. parviflora is a large, vigorous and hardy shrub with flowers in compact, many-flowered corymbs. It is a native of Northern China and Mongolia. A hybrid between these two species was made by the French hybridizer Lemoine many years ago and has been called D. Lemoinei. It is a large shrub sometimes five or six feet high and broad which covers itself with large clusters of pure white flowers. Handsome and more compact varieties of this hybrid are the varieties compacta, Boule de Neige, Avalanche and Candelabre.

Varieties of another of the Lemoine hybrids called Deutzia rosea sometimes flower well and promise to be good garden plants in sheltered positions. This hybrid was obtained by crossing D. gracilis and D. purpurascens; the latter has petals which are purple on the outer surface and is usually not hardy in America. D. rosea and its varieties have flowers more or less tinged with purple. Another hybrid obtained by the same cross by Lemoine called D. myriantha has white flowers, and its varieties called Boule Rose and Fleur be Pommier are handsome and apparently hardy plants with flowers tinged with red.

Deutzia scabra, a native of Japan and China, is one of the hardiest and most generally cultivated of all Deutzias. It is a tall shrub with reddish branches, rough leaves and erect clusters of white flowers sometimes flushed with rose. This is the Deutzia of old American gardens north and south. The variety crenata has brown branches and smoother leaves, and although less common in gardens appears to be equally hardy. The variety Watereri has flowers tinged with red on the outer surface of the petals. There is a variety plena with double flowers with petals tinged with rose colour. The variety Pride of Rochester has flowers tinged with rose and is one of the handsomest of the group. Deutzia grandiflora is the first of the genus to flower in U.S.A. Although known to botanists since 1832 it has only recently found its way into American gardens through the agency of the Arnold Arboretum.

NOTICES OF BOOKS.

Jam-making.

"Beeton" in the kitchen is a name to conjure with, and the latest "Beeton" will attract the attention of many a housewife in the late summer and early autumn when the perplexities of fruit preserving in its various branches add to her work and worry. The small volume on Jam-making, recently published by Messrs. Ward, Lock and Co.,* will prove itself a veritable treasure, answering as it does, such puzzling questions as: "When should the jam be made?" "How is the fruit prepared?" "What are the proportions of fruit and sugar?" and giving full instructions as to the use of water or no water, the length of time for the cooking, and the final covering and storing of the pots. Nor does the book confine itself merely to jam; it includes ample directions for preparing many kinds of marmalades, jellies, crystallised and dried fruits, pastes and curds, syrups and pickles, besides homely wines and store and condiment sauces. We are taught also how to bottle fruits and vegetables for winter use. All these matters are treated in detail, yet concisely, and difficulties are smoothed away in a simple fashion expressed in clear type.

Among the 400 recipes are given those for making such old favourites among the sauces as Harvey, Worcester, and Anchovy. Many recipes unfamiliar to the average housekeeper are given, such as those for Maidenhair Syrup, Prickly Pear Jelly, Mustapha Ketchup, Welsh Nectar, and Tipparee Jelly. In the first of these we doubt whether any but professed cooks know what "Capillaire" is, whether, root, stem, or leaves.

Most of the instructions given are simple enough, but we think that the average cook-domestic of this twentieth century will grudge the time and trouble necessary for pickling Radish pods, however good the result. We quote from page 86:—"Cover some young Radish pods with strong brine, let them remain for twelve hours, then drain the brine into a saucepan, and boil up. Pour the boiling brine over the pods, cover closely with a close-fitting lid or plate, let them remain undisturbed for forty-eight hours, then repeat the boiling process. Repeat again and again until the pods are perfectly green, then drain until they are quite dry, and pack them loosely in jars. Add two or three tablespoonfuls of grated horse-radish to sufficient prepared and spiced vinegar, pour it boiling over the pods, and cover closely. On the following day strain, boil and replace the vinegar, and, when quite cold, tie down securely and store in a dry, cool place." We have found the pods equally good, probably barring the colour, when treated according to the more simple instructions given for Nasturtiums.

In the pages of this treasure-book no mention at all is made of Loganberries. Presumably the same treatment as that accorded to Raspberries or Mulberries would suit them also, but, at any rate, they deserve a passing notice. The omission will cause disappointment to any amateur whose canes are loaded plentifully with the fruits, as they seem to be in most places this summer. A few words about Medlars too, would have been acceptable, for jelly made of these fruits is by no means to be despised. Dartmouth Crab-Apples too, might well have been included, for they can be made into excellent pickle, as well as jam and jelly.

The modern cook has to unlearn what used to be a fixed rule—let the jam cool before it is tied down; now it is impressed upon her that it must be covered before "the escaping steam loses its power to exclude the air."

Many hints are given on not only cleansing, but sterilising the pots before use. We wish that something had been said about cleansing the fruit itself, for the urban cook has often to depend for her jams upon the fruit laid out on the greengrocers' slabs, or barrows, and exposed for hours to the dust and dirt of the street, and the attacks of flies and wasps.

Much time and vexation of spirit will be saved by the recommendation to make use of at least one glass jar among a number of stone or earthenware pots. This is for inspection purposes and will show whether the jam, in weeks to come, is keeping free from mildew. It saves the trouble of opening any of the pots and tying them down again.

Finally we can congratulate the compiler of this useful volume on having escaped the pitfall of the phrase "a little" common in most cookery books. Here we find the quantity of every ingredient plainly set down, thus affording no excuse for uncertainty in matters of flavouring or for differences when a second batch of jam, jelly or wine is to be made.

Carnation Culture.

Now that a supply of Carnation blooms all the year round is an essential matter in a very large number of gardens, it follows that growers and employers alike are interested in the cultivation of the plants. In the larger gardens one or more houses are set apart for the cultivation of the perpetual-flowering varieties and where this is the case no great difficulty is experienced in producing flowers in the winter as well as at other periods of the year. But in his recent book on Carnation Culture* Mr. Montagu Allwood gives full instructions for the culture of these Carnations by amateurs, who have but limited accommodation, and herein lies the great value of his book. Of course, he also indicates in his racy and practical manner the *modus operandi* to be followed by growers who have full facilities and are expected to "deliver the goods." His detailed methods of propagating indoor Carnations, perpetual-border Carnations, and Pinks of the Dianthus Allwoodii type, are very convincing and the observations accompanying them are interesting. The general cultural routine for Carnations is given for all seasons of the year and we are glad to find Mr. Allwood lays particular stress upon the need for careful watering and fresh air during the winter months.

Quite naturally, a goodly chapter is devoted to the culture and use of varieties of Dianthus Allwoodii, and here would we digress to observe that there is no such plant as "Allwoodii" and as we are certain Mr. Allwood and his brothers know this quite well, it is unfortunate that correctness of naming is sacrificed apparently for the sake of advertisement. "The new plant Allwoodii" should read "the new race of hybrid Pinks, known as Dianthus Allwoodii," etc. To put it another way, Allwoodii is in the nature of a specific and not a generic title. Mr. Allwood's reversion of a well-known and fully recognised method of nomenclature is eccentric, incorrect and unpleasing. For the varieties of the hybrid race we have nothing but praise. The book itself is in effect the fifth edition of *The Perpetual Flowering Carnation* published in 1910, and its hundred or so of pages show how great has been the progress made with Carnations in a little more than a dozen years; it also contains practical and freely illustrated advice which cannot fail to be of value equally to the person who grows a dozen plants as to the one who cultivates twelve thousand.

ALPINE GARDEN.

GERANIUM SANGUINEUM.

On the higher and drier parts of the rock-garden, in the most impoverished of sun-beaten soil, this Geranium cheerfully maintains a succession of flowers from midsummer to autumn. It is long-lived in such conditions and will propagate itself by self-sown seedlings more freely than most plants. It appears to hybridise freely with S. nodosum, if not with G. striatum and others, and while some of the offspring from these unions are very charming, all are excellent material for open spots in the woodland or wild garden.

There are a number of forms of G. sanguineum, one of the most distinct in colour being the larger-flowered Continental plant usually sent out under the name of G. nepalense. There is also the almost prostrate form common to some of our sea-cliffs, and the white variety, which might easily be taken for a distinct species for it is much taller and bigger in every respect than the type. Further, the pure white blooms are more starred, the habit is looser, the foliage more finely cut, and the plant certainly tends to run underground more than does the typical species. Anyhow, this albino is an excellent subject, a most profuse all-season bloomer and one that by no means objects to a little shade.

The gem of the family is, however, G. lancastriense, found on Walney Island and considered by some distinct enough to rank as a sub-species. This is one of the choicest of all rock-garden plants, an easy doer and an abundant bloomer, its close-set mat of dark-green foliage being covered nearly all the summer with the large salmony-rose flowers that are delicately veined with pink. This little treasure is often the first of the hardy Geraniums to bloom and the last to go over. *A. T. J.*

FRUIT REGISTER.

MELON VICTORY.

Melon Victory is one of the best scarlet-fleshed varieties in cultivation. The plant has a good constitution, is a free setter, and the fruits are of splendid flavour, juicy and with a firm flesh; for early cropping this variety is unsurpassed. *A. B. Wadds, Englefield Gardens, Reading.*

---

* *Mrs. Beeton's Jam-making, including Preserves, Marmalades, Pickles, and Home-made Wines.* Ward, Lock and Co., Ltd., London and Melbourne. Price 2s. 6d. net.

* *Carnation Culture up-to-date.* By Montagu C. Allwood, F.L.S. The Cable Printing and Publishing Co., Ltd., Hatton House, Great Queen Street, W.C. Price 2s. 6d.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

THE SASSAFRAS TREE AT CANNIZARO.

GERARD, writing nearly three hundred years ago, tells us of "a little Sassafras tree which grew in the garden of Master Wilmote at Bow in 1630."* I quote his words to show that Sassafras officinale was one of the earliest American trees to be brought to England. Yet to-day it would probably be hard to find a dozen specimens in the British Isles, so rare has it become. For some reason or other, possibly owing to the fact that its thick, spongy roots make it difficult to establish, the tree never seems to be planted now-a-days, and it is practically unobtainable in the nurseries. Yet in dignity and quiet beauty it beats many a more showy newcomer to our gardens. All the trees known to Loudon,† including the one at Syon, reported to be forty feet high in 1838, and figured by him, have long since disappeared, and of those recorded by Elwes‡ only the one at Claremont, which is about sixty-nine feet high by six feet six inches in girth, can claim to be a really fine specimen, and the loss of a large branch some years ago has spoiled its shape.

The discovery, therefore, two summers ago, of another Sassafras tree about sixty feet in height by eight feet six inches in girth in the old garden of Cannizaro on the north-west side of Wimbledon Common, was of unusual interest. A general account of these gardens was published in the *Gard. Chron.* of July 14, 1923. The old house was occupied about a hundred years ago by a refugee from the Continent, Count Antonio, who afterwards became Duke of Cannizaro§ and married a rich English heiress. The house, to which he gave his name, dates from the Restoration and was burnt down more than twenty years ago. The Duke is believed to have planted a Lebanon Cedar, the battered remains of which are still to be seen on the lawn facing the house. It seems not unlikely that he also introduced the Sassafras, as a tree of this size may easily have lived a century. The tree was found hidden away in a dense thicket of Rhododendron ponticum, which had almost smothered it and completely concealed its fine trunk. Here it had flourished for many years forgotten and uncared for, until it was fortunately discovered by Sir George Holford and the present owner, Mr. Kenneth Wilson, both keen gardeners with a flair for trees and shrubs. Mr. Wilson has spared no pains to give the tree—now a much prized possession—a new lease of life (Figs. 33 and 34) The shrubs which choked it have been cleared away and the tree cleaned up and freed from snags and broken branches, the result of years of neglect. It has also enjoyed the luxury of a liberal mulch to which it has responded in a most encouraging fashion. Unfortunately, a large limb was blown off some years ago, but in spite of this injury the tree is still the finest known specimen in this country.

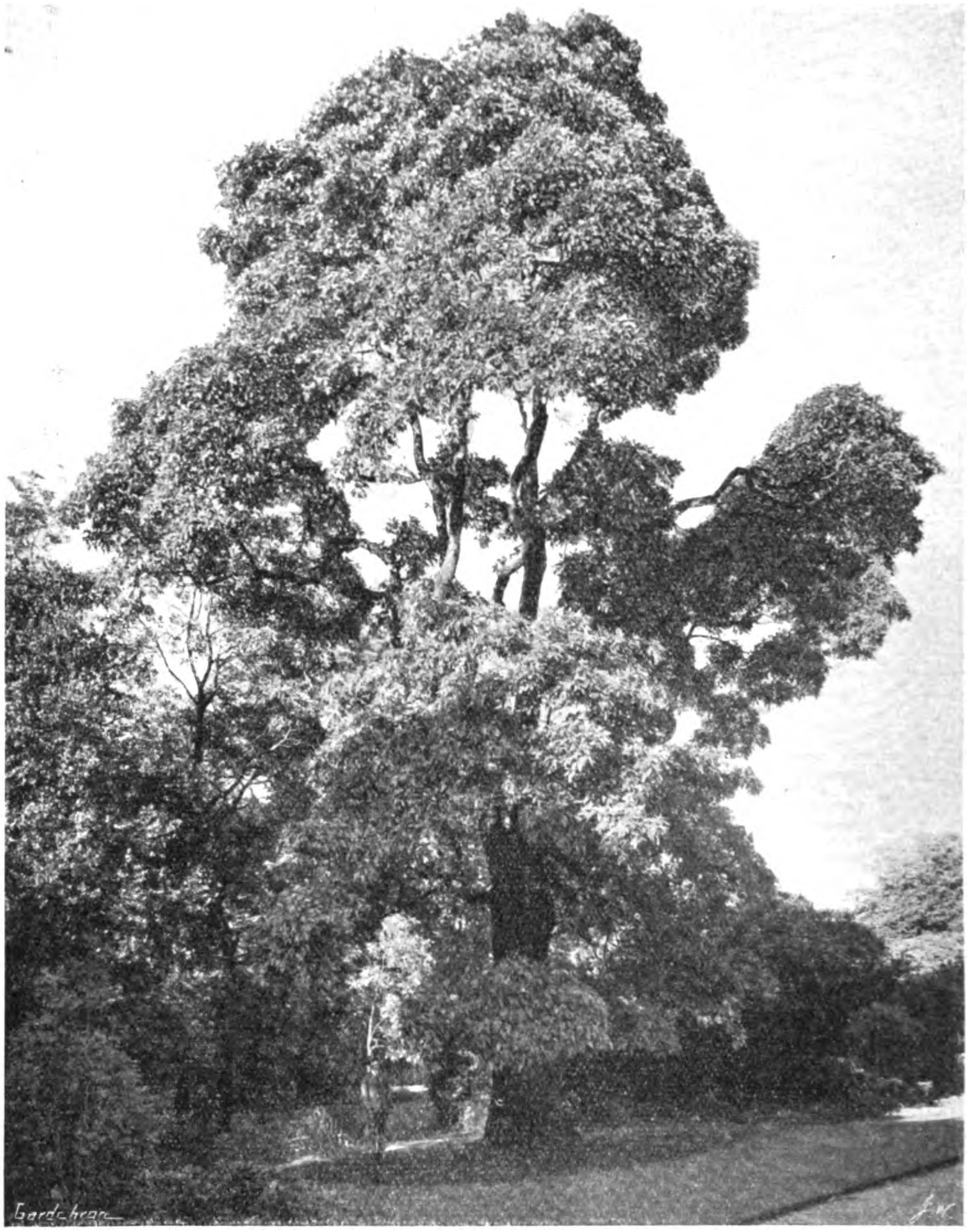


FIG. 33.—THE SASSAFRAS TREE AT CANNIZARO, WIMBLEDON.
SUMMER VIEW.

Three smaller trees, obviously root-suckers of the larger one, were growing close by, having remained undisturbed for many years. One of these is now forty feet high and is probably at least half a century old. The two smaller trees have since been moved to Westonbirt and Woburn. It is doubtful, however, if they will survive the ordeal of shifting as they were growing in almost pure sand in which the Sassafras delights, and when taken from the ground almost every particle of soil fell from the roots. Every spring and summer fresh root suckers appear all round the tree, and a number of them have been taken up and grown on in a cool greenhouse with a little bottom heat to encourage root action. When thus established they may be transferred to the open ground with safety.* This is the best means of propagating the Sassafras in this country. Both Elwes and I have tried to get seedlings from imported seed, but in each case only one germinated. One raised at Endsleigh, Devon, by the gardener, Mr. R. F. Fitt in 1922, lived through two winters, and was a foot high when cut to the ground this spring. The plant has now been lifted and potted to try to save it.

---

* Gerard's *Herball* (ed. Johnson), 1524 (1633).

† *Arb. et Fruit. Brit.*, III, 1301, and V. figs. 172 and 172a (1838).

‡ *Trees of Great Britain and Ireland*, III, 518 (1908).

§ Immortalized in the *Ingoldsby Legends*.

* Four suckers have also been transferred direct from the parent tree to a wood near by, where they are making good growth.

The Sassafras is a fascinating tree at all seasons of the year. In winter, its deeply fissured cinnamon-grey bark, reddish within, and pale green branchlets are very striking. The yellow flowers appear in spring before the leaves unfold. The form and structure of the flowers, which are unisexual or rarely perfect, are well shown in the beautiful drawing kindly executed for me by Miss Lister (Fig. 35). The trees in cultivation here seem to produce only female flowers, which occasionally, however, have fertile stamens. The leaves are a delicate glaucous green on opening, being sometimes entire but often two or three lobed. On native trees, however, they are often four, five or six lobed. In autumn the tree becomes very attractive as the foliage is then coloured with delicate shades of orange, yellow and red.

The brilliantly-coloured fruit of the Sassafras, which, so far as I know, has never been produced in England, is a bright blue berry, set in the enlarged, scarlet, cup-like calyx of the flower, and supported on a slender stalk. Although produced in abundance in some seasons, the fruits are soon devoured by birds and their beauty is thus short-lived.

The foliage is pleasantly aromatic, the roots and twigs strongly so, and this character is not uncommon in the large tropical family of Lauraceae to which Sassafras belongs.

The Sassafras tree grows wild in the Eastern States of North America, extending from Massachusetts west to Iowa and Kansas, and from Ontario and Michigan, south to Florida and Texas. In Florida it reaches an altitude of 3,500 feet. In its native habitat it is sometimes ninety feet high with a trunk so much as eighteen feet in girth.

The romantic history of the Sassafras tree and its supposed medicinal virtues are graphically described by Sargent in an article in *Garden and Forest*, VII, 215, from which the following is extracted:—"The Sassafras is the last survivor of a race which, at an earlier period of the earth's history was common to the two hemispheres. It is the only tree in a large family which has been able to maintain itself in a region of severe winter cold. Towards the middle of the sixteenth century the French in Florida heard from the Indians wonderful accounts of the curative properties of a tree which they called Pavame and which the Europeans called Sassafras. The tree and its virtues were first described by the Spanish physician Nicholas Monardes, in his *Natural History of the New World*, published in Seville in 1569. The reputation of the roots and wood as a cure for most human maladies soon spread through Europe, and extraordinary efforts were made to procure them. To collect Sassafras was one of the objects of the English expedition which landed in Massachusetts in 1602. For nearly two centuries the reputation of Sassafras was maintained and many medical treatises have extolled its virtues, though now it is generally recognised as simply a mild aromatic stimulant. The thick pith of the young branches yields a mucilage which is employed by oculists, and oil of Sassafras obtained from the wood and roots by distillation, is used for perfuming soap and other articles. A yellow powder prepared from the leaves is used in cookery."

The Chinese Sassafras tree (Sassafras Tzumu) is little known in this country. It differs from the American species in flowers and foliage. A plant ten feet high raised from seed sent home by Wilson in 1900, formerly grew in Messrs. James Veitch and Sons' nursery, at Coombe Wood, Kingston. *A. Bruce Jackson.*

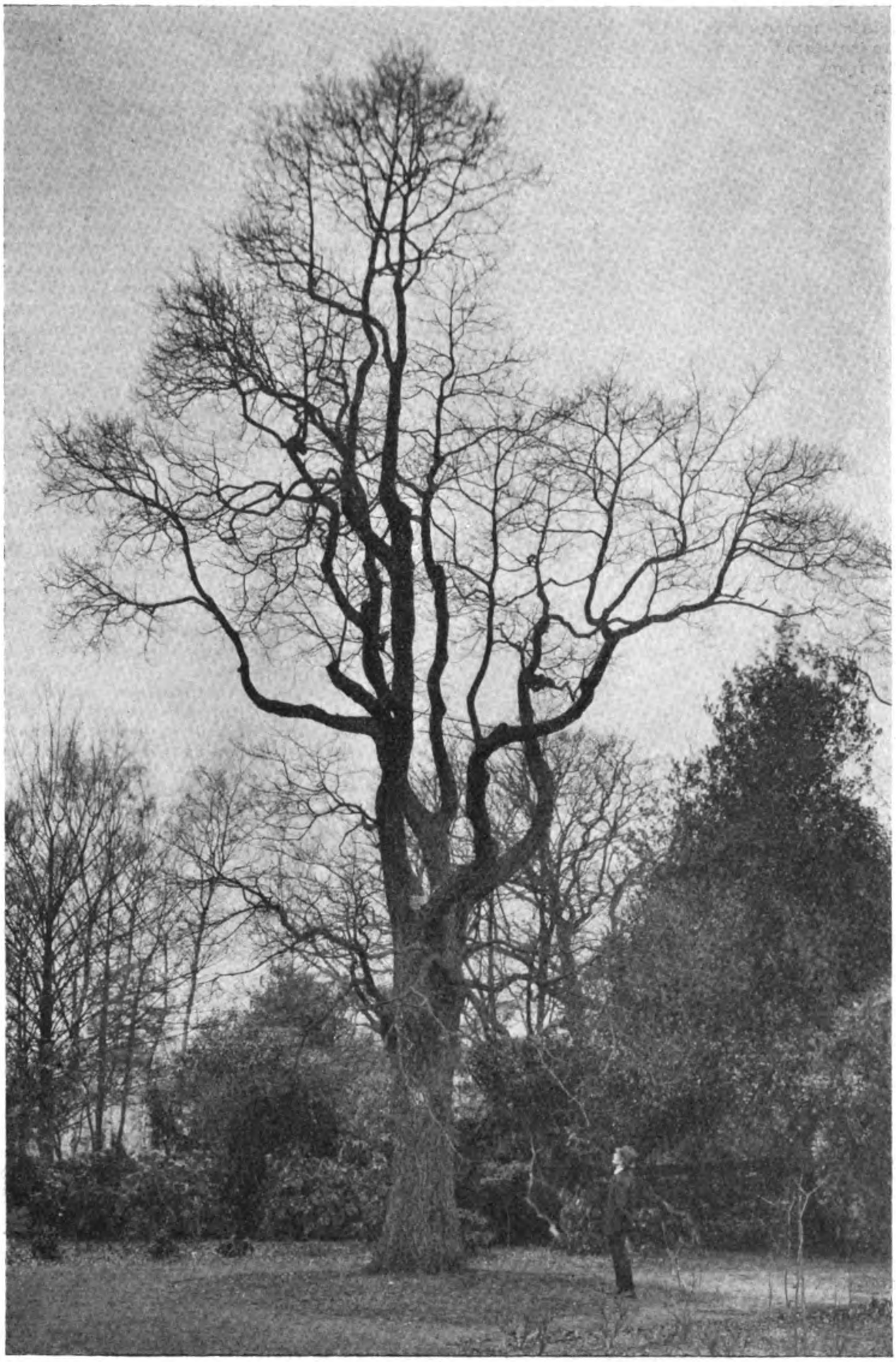


FIG. 34.—THE SASSAFRAS TREE AT CANNIZARO, WIMBLEDON.
WINTER VIEW.

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.

IV.—FIRST DAYS IN TIBET.

WHEN we crossed the Nathu La into the Chumbi valley, we were, politically speaking, in Tibet. But the Chumbi valley, which lies south of the great Himalayan peaks, is more like Sikkim than Tibet; and it was not until we reached Phari that we were geographically in Tibet. Once over the Tang La we were on the plateau itself.

I have already written something about Tuna and the Dochen lake. For the first few days after leaving Phari we marched over the endless clays, gravels and mud of by-gone lake beds, amidst bleak and barren mountains; but on the fifth day the scenery began to change, and we found ourselves marching down a valley beside running water. If I were asked my impression of Tibet during these few days, I should reply, dust, wind, an incredibly blue sky, and brightly coloured stony hills, strongly outlined in the hard, brilliant light. Trees and shrubs there were none, nor any green thing. But every day brought forth fresh evidence of flowers in the summer—there is no spring to speak of.

On the sixth day, still marching down the valley, with evidences of cultivation here and there, we passed through Red Idol Gorge, famous in the days of the Tibet Mission; and now the scenery changed a little. In the scattered villages were small thickets of ash-grey Hippophaë rhamnoides, growing about eight feet high, and a few Poplar and Willow trees, while the stony hillsides were covered with the remains of plants, as yet showing no signs of returning life. Conspicuous amongst these were two cushion plants and a tall Senecio whose large, dead leaves still rattled in the wind. There were also patches of a small very prickly Berberis, and tufts of some Labiate under-shrub. All these, however, were scattered, so that looking at the hillside from a distance, one saw more stones than plants—if, indeed, one saw any plants at all. The country was still a desert.

Here and there, however, where snow was still melting, or where a spring oozed out, there were slopes covered with brown grass, and in such boggy patches I found the remains of quite a respectable flora, including species of Pedicularis and Phlomis. On the slate rocks were tuffets of a small Ephedra. But by far the most interesting plant met with here—since it was in flower—was a wee bog Primula. The flowers vary from rose to mauve, with a minute bright yellow eye, no meal anywhere, and a faint, sweet fragrance. Growing there in the midst of that brown wilderness, a sleeping beauty which had just opened its starry eyes, it was charming enough. It starred the dead ground with constellations and nebulae of rose pink; but at the same time it would be useless for horticulture. It is too small—smaller even than P. bella, and people do not want their lawns sprinkled with tiny Primulas like Daisies. Even in fruit the plant is less than an inch high.

As to where it comes in the hierarchy, I do not know—the long slender capsule reminded me of P. minor on a minute scale; but it is not one of the 'Nivalids' at any rate. It comes very near the little Chung-tien bog Primula, which I found many years ago in Yunnan—one of the 'Yunnanensis' section, I believe. True, the latter have meal on the leaves, but this species may develop meal later. It was not, however, confined to bogs, but grew almost anywhere where there was turf in support and a sandy soil below, its roots tightly interwoven with those of the grass. I collected a pinch of last year's seed and sent it home (K.W. 5615).

On April 2 we reached Gyantse, which marked a very definite stage on our journey. Botanists have been to Gyantse before; Mr. G. H. Cave was there only last year. That fact, combined with the wintry weather and the desert country, prevented me from being particularly thrilled. But after leaving Gyantse we would break new ground.

We spent a week at Gyantse, making final preparations for our plunge "into the blue," and I had an opportunity of seeing something of our surroundings, though grey skies, bleak winds and dust made it far from pleasant out-of-doors. The small valley plain is enclosed by the usual bare, stony Tibetan hills, rising to 17,000 feet or 18,000 feet, and deeply trenched by streams, now dry. There are a few trees, Poplar and Willow, but one has to look for them at this time of year, since they are the same colour as their surroundings. In summer the whole plain is green with crops, but up to April 10—we left on the 11th—not a shred of green showed anywhere. About a fifth of the total area of the valley consists of gravel and sand; the rest is clay, as hard as iron, except where it has been broken up for cultivation.

High up on the flanks of the hills, where the deepest gullies are cut, small, white monasteries are perched, indicating that here, at any rate, is water. I climbed up to one such monastery to see what vegetation I could find. Along the base of the hills was a regular line of sand dunes, covered with a thin low scrub of Sophora viciifolia, growing less than two feet high. Its seeds were scattered about on the sand, waiting for the first rain. From sand I passed to gravel—bare, stony, gently shelving talus slopes. Here shrub growth ceased. Tufts of withered Leguminosae (a species of Astragalus probably) and scattered cushion plants there were below; and higher up, clumps of Cimicifuga (two species), and a thick-rooted Aster. There were plants in plenty, but not much variety. The Compositae had it almost entirely to themselves. I did see a wee Draba, a tiny-leafed Caragana, and here and there on the rocks, crusts of Androsace Chumbyi. The higher, steeper slopes of the mountain, however, were dotted over with compact bushes, about four feet high, which on inspection turned out to be those of a Rose—R. sericea, I think. They were very compact and thorny. Down in the deepest ravine, above the monastery, water was trickling. In the immediate vicinity of the building there were some fair-sized Willows and thickets of Hippophaë, draped with long festoons of a very ordinary looking Clematis. Following up the ravine, a few plants were seen on the cliffs, one of which looked uncommonly like a Meconopsis; but it was too battered and old for me to be certain.

Coming down to the plain again I noticed a tiny blue Gentian in flower—the second flower seen since leaving Chumbi. It must be remembered that from a short distance these hills in April look absolutely bare, though no doubt for two or three months in the summer the vegetation is conspicuous.

The above description suffices to show that we have here a typical desert flora; for nine months in the year there is practically no vegetation; wind, drought, and dust sufficiently account for that.

Despite a comparatively comfortable bungalow at an altitude of 13,200 feet, I was thankful that Gyanste was only a stage on our journey, not the scene of action itself. On April 11, in gorgeous weather—it had been snowing only three days before—we started on the Lhasa road for the Yamdrok Lake and the Tsangpo; we had still to cross a good deal of country at 14,000-15,000 feet altitude before reaching the river. The lake itself stands at an altitude of over 14,000 feet.

Our road lay first over the plain, where clumps of Irises were thrusting green spears through the clay; and so up a valley to the north, which presently narrowed to a gorge.

I explored a cliff and found the crystalline rocks encrusted with gaily coloured lichens—chrome and buff, orange, rust-red, and grey. There was plenty of moss too, and a small Fern; and flowering plants, though scattered, were not wanting. I noticed a Sedum, a Delphinium, a large Gentian, and even a Didissandra, with very woolly leaves: besides the usual small shrubby Compositae, tufts of grass, and a Crucifer with slender siliquae closely adpressed against the stem. All these were on the sunny face of the cliff at an altitude of 14,000 feet! It must be understood, of course, that these plants were entirely dead and shrivelled up; they represented so many disfigured but recognisable corpses. Nevertheless they gave a very good idea of the extent and variety of the flora in this part of Tibet.

The harsh features of all this semi-desert plateau country are due to (i) a vast excess of weathering over transport; (ii) fierce but brief spates; and (iii) absence of vegetation. Owing to the violent alterations of temperature, huge accumulations of rubble, weathered in situ, remain on the mountain slopes. Out of every gulley masses of gravel are flung into the valley, where it forms deep drifts. Then melting snow in spring and heavy rain storms in summer tear deep rifts in it, and the streams cut it into blocks and terraces. There is no vegetation to hold it together, or to soften the outlines, or to form a soil. There is only gravel and shingle and sand, with boulders everywhere, and above, cliffs and screes.

On the 13th we crossed the Kara La, the highest pass between India and Lhasa, 16,200 feet. The glen leading up to the pass, though under ice and snow, was fairly well vegetated with bushes of Barberry and Potentilla fruticosa. I even found Potentilla peduncularis on the cliffs, besides one or two Umbelliferae, and tanglements of green Juniper. In the gravelly bed of the stream grew a small Cyananthus.

The road winds over a pass between two snow peaks, nearly 22,000 feet high, whose glaciers come tumbling over the cliffs almost at your feet. On the following day we reached the beautiful Yamdrok Lake, and turned off the Lhasa road to traverse the southern shore of the lake. We were now travelling practically due east, parallel to the Tsangpo, but still separated from it by one more range of high mountains. I had hoped that it would be warmer in the Yamdrok basin, though the altitude of the great lake itself is 14,200 feet. However, it turned out to be, if anything, colder here than on the Tuna plain. April showers, which, of course, were snow showers, and a biting wind added nothing to our comfort.

For three days we travelled along the southern shore of the lake, which is many armed and enclosed by steep mountains, crossing from arm to arm over high wind-swept spurs. Sometimes we marched over bare, level, mud plains, from which the shrinking lake had withdrawn. Every day the pastures grew richer, and some of the slopes were so well clothed with Juniper that we were able to burn real firewood at night again. This Juniper, though it grows no more than a foot or eighteen inches high, forms thickets ten or twelve feet through, and many hills were darkly mottled with it. In the valleys, too, there was plenty of withered pasture, while by the boggy streams the grass grows two or three feet high in summer. On April 17 we actually saw a flower again—the wee bog Primula already recorded from the other side of Gyantse.

At this time we were travelling fifteen or sixteen miles a day, which was as much as our assorted transport—yak, donkies, cattle and ponies, could do. The villages where we stayed at night were very poor, and we were able to buy no supplies save milk and eggs—and not always these. Meanwhile, each day we saw gazelle on the plains, hares on the hill, partridges in the valley, and duck and geese on the lake; and might not shoot any of them. How we longed for an expert poacher to join us!

On April 18 we finally left the Yamdrok Lake, and making a twenty mile march, reached a village at dusk in a snowstorm. The transport did not arrive till two hours after dark. Easter Eve, however, was our great day, for at noon we stood on the pass, about 16,000 feet between the Yamdrok basin and the Tsangpo. We were enveloped in a blinding snowstorm, so that we could see nothing, not even the path. However, we went ahead, and leading our reluctant nags, eventually picked up the trail. Two hours later the storm ceased, the sun shone out, and whereas we had been freezing a moment before, now we were suffocated with heat! Fur caps, sheepskin coats, mittens, all were doffed; and we plunged through the snow with blistering faces. Such is Tibet!

On the way down from the pass, below the snow, I noticed a Helianthemum on the gravel banks; a cushion Androsace, which I should like to see in flower; and a Polygonum whose dead leaves and stems of brilliant orange scarlet, marked it out as a plant for winter decoration. Then we turned the shoulder of the mountain, and saw just below what at first I thought must be the Garden of Eden. *F. Kingdon Ward.*

HORTICULTURE AT THE BRITISH EMPIRE EXHIBITION.

TREES AT WEMBLEY.

No exhibition in this, or probably any other, country has possessed so many large trees as is the case at Wembley. Some forty or so years ago the site of the great British Empire Exhibition was laid out as a private park. At that time there were ancestral Oaks, mature Elms and Horse Chestnuts, and younger plantations of mixed Broad-leaved species. These were, of course, retained and many groupings of more ornamental kinds were made.

The brief period when Wembley Park was an exhibition of sorts, with a skating rink, trotting track, cricket ground and a partly erected tower, may be passed over, as it does not seem to have had any effect on the trees there. Nor did the Golf Club, which succeeded the old exhibition, though the sheep, which grazed the fairways and "rough," also browsed on the many shrubs with evil effects.

We are now concerned more with the trees in relation to the present Exhibition of world wide fame. When the site was first acquired it was hoped to retain all the trees and shrubs—the giant Oaks, Elms and Horse Chestnuts, together with the tasteful groupings of Pyruses of many sorts; of American and other Thorns; the exceptionally fine specimens of Elaeagnus orientalis and many other ornamental trees and shrubs. With this end in view the management sought the services of Mr. A. C. Bartlett, the tree expert, of Kew, who, by judicious thinning and careful treatment, transformed the neglected plantations and groupings into pleasant places.

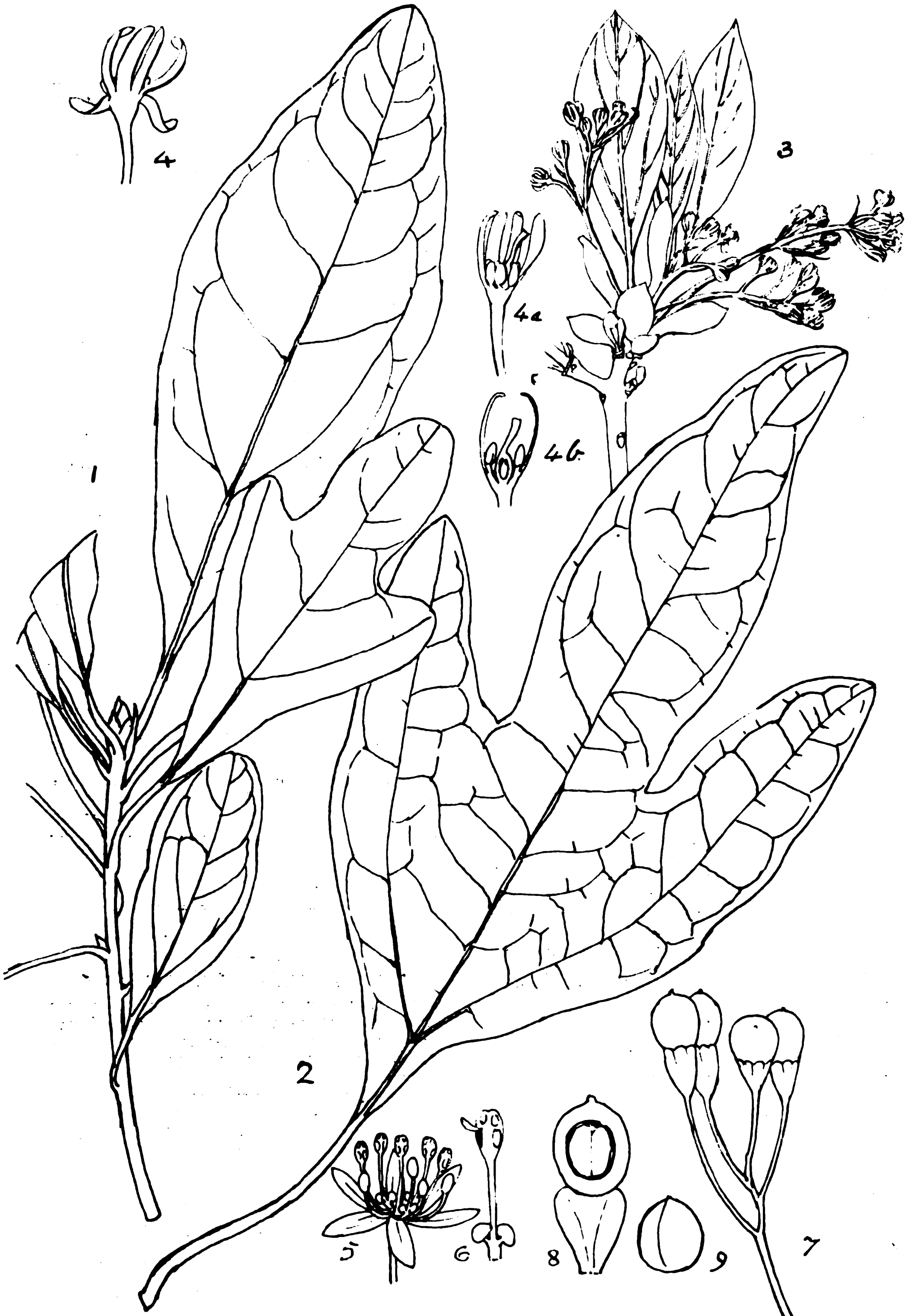


FIG. 35.—SASSAFRAS OFFICINALE, NESS.

1, Shoot and leaves, autumn; 2, lobed leaf; 3, shoot and inflorescence, spring; 4, female flower, enlarged; 4a, the same, perianth partly removed to show the staminodes; 4b, longitudinal section of female flower; 5, staminal flower, enlarged; 6, stamen, showing four-celled anther, and two glands near base of filament; 7. clusters of berries; 8, fruit cut open, showing berry seated on a fleshy base, enlarged; 9, seed, enlarged. Figures 1 to 4 from life; 5 to 9 after Sargent (*Silvae*).

Such was the prospect when we paid our first visit to Wembley Park, but from the landscape gardeners' point of view the exhibition project was too successful. The demands for space increased apace. To-day's anticipations were doubled to-morrow, so that trees which had been treasured were, of necessity, sacrificed.

But, even so, many of the original trees remain. In front of India's lovely palace there is an exceptionally fine Horse Chestnut, which towards the end of May and on into June, was crowned with its candelabra of bloom and rivalled the largest tree in Bushy Park's famous avenue, and enchanted the throngs of visitors. On the broad avenue which leads from New Zealand to India there remain some of the ancestral Oaks and lofty "Cotton" Poplars which recently, when shedding their fruits filled the air with "cotton," giving the effect of a summery snowfall. Along the west side of the Imperial Stadium some others of the old trees remain.

These are trees in their original stations. But there are many more, which stood on the projected sites of various buildings and have been transplanted to places where no trees grew. Along the broadway to India there are groups of Lime trees 40 feet to 50 feet high; Horse Chestnuts over 50 feet high; broad spreading specimens of Pyrus Aria, P. pinnatifida and others which were bodily lifted and transported considerable distances to their present positions, probably the largest trees that ever have been transplanted. A special machine was constructed to carry the great weights, estimated, in an extreme case, to be seven tons, and a caterpillar tractor was hired for this purpose. So well was this gigantic transplanting done that now, in their second year, all the trees are in full leaf and of inestimable value where they stand.

Such, briefly, are the trees which have been saved from the hands of the builders and they alone, as we have indicated, have immense value. But in addition the authorities have had planted a great many trees and shrubs of much larger size than usual. Along the confines of India there are specimens of Cupressus Lawsoniana varieties fully 15 feet high. Very tall young Limes are set in the Main Avenue. Along the lake sides there are Beech, Hornbeam, Laburnums, Pyruses of sorts, and there also stand a most shapely Picea pungens glauca over twenty feet high, and half-a-dozen large Prunus Pissardii which are to be numbered amongst the transplanted successes. The Lime trees, 25 feet or so high which were purchased in Surrey and hurried by lorry to Wembley are in the formal flower garden, where there are splendid specimen Rhododendrons of quite tree-like size.

The success which has attended the transplanting on the grounds and from a distance is a tribute to the great skill of the planters and the success would have been even greater but for the intolerable grey dust which for so long smothered many of the trees and shrubs. The ill-effect is naturally most noticeable with the Coniferous species and nowhere more so than with the Cupressus by India's palace where it is to be hoped that the recent heavy rains may save most of the specimens. It is impossible for us to fathom the reasons of the management for adopting their method of surfacing the main avenues with lime stone chippings, which, during hot, dry weather, quickly become impalpable powder almost intolerable to visitors and deadly to plant life. It seems to us that the ideal surfacing for paths in an exhibition is tar spraying with plenty of small gravel, as is done in the main walks at Kew and in most public parks.

FLOWER SHOW JUDGES OF THE FUTURE.

A matter of serious concern that has impressed me for some years, in fact since flower shows were resumed after the war, is that we have lost many of the men who were foremost among horticultural judges, and the few veterans of long and wide experience who still officiate at our most important shows are alas! becoming fewer almost every year. As one looks around, there seems to be scarcely any young men stepping into the breach and keeping the ranks of our qualified judges in close formation.

In looking back over the years that have constituted a fair stretch of flower show experience, I recall to mind such men as John Wright and George Gordon, journalist-judges of great ability; the brothers Dean, versatile, enthusiastic and exacting; Charles Turner and James Douglas, nurserymen who knew the points of a florists' flower; William and George Paul, John Perkins, Dean Hole, the Rev. Wolley-Dodd and the Rev. Foster-Melhar, who judged the Roses of the end of last century and beginning of this; James McIndoe and J. Goodacre, the great fruit men, and others who specialised in various branches of the profession.

When these men fell out of the ranks their places were filled by men who had already gained experience by having assisted with the older men at the best of shows. Thus it is we may meet at Shrewsbury, Wolverhampton, Birmingham, Southampton, etc., the judges who have been judges at these shows for a quarter of a century, but what we do not see is a younger generation accompanying these experienced men as they might have been seen accompanying the men whose names I have recalled. These younger flower show judges are wanted now to gain the necessary experience, for unless we look ahead a few years, the committees of our greatest flower shows will in the future by faced with a difficulty they will be unable to solve.

Half the blame, indeed the major portion, lies with the committees themselves, for the simple reason that instead of adhering to the former policy of bringing in a fresh, young judge from time to time to pick up the threads and qualify with the help of the veterans, they just appoint their judges, year after year from the same little group, and if one of their own regular judges drop out they seek a substitute from the regular judges at others of the leading shows.

How many of what may be termed the younger experts in horticulture can say that they have been invited to judge at Shrewsbury? and what happens if an aspiring young man ventures to ask to be appointed as a judge at an important show; he is accounted presumptuous and conceited. Not that our veteran judges are pharisaical in their attitude toward a new comer, indeed I could name some of the best of them who deplore the facts to which I am drawing attention, for as more than one has said to me, if occasion arises when they would be very glad to be relieved of their task through unforeseen circumstances, they are at a loss to find a deputy if it happens to be on a big show day when their own particular comrades are all engaged.

Another aspect of the question is that with the movement of the times and the continued progress of horticulture new ideals have to be set up; new features, new varieties of plants, new styles in exhibiting confront the judges, and it is practically impossible for men whose ideas and standards were fixed many years ago, and who have judged to those standards at scores and hundreds of shows to readily revise their standards and time themselves accurately to the newer phases of exhibition work. That is an important reason in support of the cry that some new judges are wanted.

We require more than ever specialist judges who are expert in the particular sections in which they officiate. We want alpine specialists for rock gardens and alpine plants, hardy plant specialists to judge hardy perennials, and so on right through the schedule.

The need for more horticultural judges is pressing, and unless it is attended to there will be a lamentable slump in the exhibition world in the near future. *A. J. Macself.*

IMPERIAL BOTANICAL CONFERENCE.

(*Continued from p. 77.*)

The proceedings at the alternative session consisted of a series of papers. The first by Professor F. W. Oliver, dealt with "Spartina Townsendii and its Applications." The history of this Grass and its distribution is of extreme interest from its importance as a coloniser.*

Mr. J. M. F. Drummond followed with a paper on "The Formations of Herbaria of Crop Plants." Students of cultivated plants are at a disadvantage in that very few monographs on crop plants exist, and herbaria of cultivated plants are at the best very fragmentary. It was suggested that the time has come for a serious effort to be made to remedy these shortcomings. The problem is large and complex and its solution calls for a carefully organised and co-ordinated scheme. To be really effective the organisation should be international; but the setting up of a British Empire Committee of taxonomists and breeders might prove more readily practicable in the first instance and would provide a sound foundation on which to erect a more ambitious edifice. Various suggestions were made towards this end, though it was indicated that there were the usual difficulties of finance and staffing.

The last paper was by Dr. A. S. Horne, "Fungal Diseases incident to Apples during Storage at Low Temperatures." As a result of investigations into fungous diseases affecting stored Apples numerous fungi have been isolated both from Apples kept under ordinary storage, and low temperature conditions. Many of the species obtained are capable of parasiting the Apple at 1°C and produce rots of various kinds.

The chief results obtained from inoculation experiments carried out under low temperature conditions are:—A succession of fungous parasites occurs during the storage season. This behaviour is correlated with the reaction these fungi exhibit towards sucrose, though the sugar factor is not the only one capable of bringing about successional attack, reactions to acidity, pectic substances, mineral salts and available nitrogen being other possible ones. The degree of virulence of a parasite varies in different years. A correlation exists between parasite virulence and the chemical composition of the cell sap—greater virulence of attack being associated with lower acidity and certain differences in sugar content. Apples of a relatively high acidity, e.g. Bramley's Seedling, are, at maturity, relatively immune from the attack of certain fungi; correlated with the fall in acidity during storage they become susceptible. It has been found that Cox's Orange Pippin Apples stored before they have quite matured are relatively more susceptible to the attack of certain fungi than those which have reached maturity. Apples of the Bramley's Seedling variety obtained from different localities vary in susceptibility to fungous attack. Increased susceptibility is correlated with a lower acidity and higher sugar content of the cell sap. Apples of the same variety obtained from the same orchard exhibit unequal parasitic infection, a varying percentage remaining unattacked.

In the evening a reception of the members of the conference was given by the fellows of the Linnean Society at Burlington House, the President, Dr. A. B. Rendle receiving the guests. There was a very large attendance. The exhibits were all of historical value and had special reference to Linnaeus. Among other exhibits were the first edition of *Systema naturae; Hortus cliffortianus*, which was written and printed within nine months, the rate of printing being expedited by commencing printing at page 301 as well as page 1, an error in "casting off" resulting in a gap of 70 pages—a trial-piece inserted in the copy exhibited shows that the first intention was to produce the volume as a quarto and not as a folio; a sheet of paper bearing Boerheave's seals and having the legend "Lodging at the Swedish Minister in Princes Square, Ratcliff Highway," evidently written by the minister Tobias Bjŏrk to be carried by Linnaeus in case of his losing himself in London; the Linnean MS., *Itar Lapponicum* or *Lapland Journal*, with three editions printed from it; Patrick Brown's *Civil and Natural History of Jamacia*, annotated by Linnaeus, with names written in the margins of the pages; these names were afterwards copied by Solander on the sheets in the Linnean Herbarium; John Ray's *Synopsis* ed. iii., bought by Linnaeus when in London, according to his note on the title page "emi Londin, 1737 Car. Linnaeus"; Caspar Bauhin's *Pinax* given to Linnaeus by a student for teaching him botany; and medals commemorative of Linnaeus.

During the evening Dr. J. M. Dalziel gave a lantern lecture on "The Vegetation of West Tropical Africa," and Dr. B. Daydon Jackson, General Secretary of the Society, gave a discourse on the Linnean collections. A pamphlet presented to the guests gave a history of the acquisition of the various Linnean treasures and the formation and career of the Society.

(*To be continued*).

BULB GARDEN.

APHYLLANTHES MONSPELIENSIS.

This curious plant, a native of Northern Africa and Southern Europe, is the solitary member of a genus included in the Liliaceae. Though long known to our gardens it was not until a few years ago that it began to be more frequently cultivated, but it is still quite uncommon. In appearance A. monspeliensis resembles a fine-leaved Rush, the grassy foliage being a soft grey-green. About mid-June these stems swell at the tips into a reddish-brown bud which on opening discloses a pretty, six-rayed star of pale blue. Though it appears to prefer shady places and a cool, even stiff soil in its native habitat, it is probably best grown in gardens, in a somewhat warm, well-drained spot where it gets all but the hottest sun. We grow it beneath the thin shade of a dwarf Buddleia in ordinary, light border loam and this appears to suit its requirements. Since A. monspeliensis dislikes root disturbance it should be planted where it can be left undisturbed, allowance being made for it to increase into a clump of considerable size. *J.*

---

* An illustrated paper on "Spartina Townsendii" was contributed by Prof. F. W. Oliver in *The Gardeners' Chronicle*, of March 15th and 22nd, 1924; pps. 148, 162.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

See Tables and Summaries, Ante, pp. 79-84).

SCOTLAND, N.

Ross-shire.—The fruit crops generally in this district are very poor owing to the very cold weather experienced during May. On the 4th of that month the thermometer registered 11° of frost, and on the 7th we had a severe storm of sleety snow, which measured 2.39 ins. for the twenty-four hours. This storm lowered the temperature of the soil so much, that growth in Spring was very slow. Strawberries were not ripe before the first week in August. Apples, Pears, and Plums are all very scarce. *John Melrose, Ardross Castle Gardens, Alness.*

Sutherlandshire.—The spring of 1924 will be notable for the remarkable show of blossom on all fruit trees, bushes and plants. Apples have set a bumper crop; Sweet Cherries are also exceptionally good, and Plums an average yield. All small fruits are good crops, while Strawberries were especially plentiful. A bed of Alton Pine Strawberry, 32 yards by 32 yards, gave a bountiful crop. The soil is inclined to be light in texture resting on a fine sandy sub-soil. *W. F. Game, Dunrobin Gardens, Golspie, N.B.*

SCOTLAND, E.

Banffshire.—The fruit crops looked fairly promising until the first week of June when we had frost on three successive nights, the amount of frost ranging from 2° to 5°. The fruit crops generally are about a fortnight late. *George Edwards, Ballindalloch Castle Gardens.*

Forfarshire.—The fruit prospects are, on the whole, fairly good, although a few crops such as Cherries, suffered badly through the continuous rains during the flowering period. Gooseberries are a light crop, but Raspberries and Currants are very plentiful. American Gooseberry mildew is held in check here through the application of dry, slaked lime on the bushes just before flowering time and when the bushes are wet. Green fly is very troublesome this year, but red spider and caterpillars appear to be less numerous. Very few Queen wasps have been noticed this year, and this no doubt is due to the lateness of the season and the cold rains experienced in the late spring. *J. B. Peffers, Panmure House Gardens, Carnoustie, N.B.*

Kincardineshire.—The weather was stormy and wet when Apple trees were in flower, and in consequence the fruits set very badly. Cherries seem a most promising crop and Black Currants also are very good. All fruit is very late and nothing is nearly ripe at the date of writing. There are many complaints in this district of American mildew on Gooseberries. *William Thomson, Ury House Gardens, Stoneham.*

Perthshire.—It is not very easy to judge the quality of the outdoor fruit crops at the present moment in this district. Our soil is of a heavy nature and this fact, together with the wet season, has made everything very late. A few of the earliest Cherries are just over; the fruits were of good quality, but the quality of Royal Sovereign Strawberries was not just what it should be. Black Currants and Red Currants are very heavy crops. Apricots and Plums are both very light crops. *James Tunstall, Keir Gardens, Dunblane.*

——The fruit crops in this district are a fortnight late, owing to lack of sunshine and the cold spring. Apple trees had a great crop of blossoms, but in consequence of damp, sunless weather, during the flowering period, we have only an average crop of this fruit. *Charles Crighton, Jordanstone Gardens, Meigle.*

——The fruit crops are wonderful considering the continuous rains which prevailed in this district for three months in spring and early summer and which have retarded the majority of the crops considerably. Black, Red, and White Currants are all carrying fair crops, though, in exposed situations, much damage has been caused to the bushes by high winds. Plums in the open have also suffered in this respect; but Plums on wall trees and wall Cherries are good. Apples flowered in great profusion; but many fruits dropped soon after setting, with the result that only a few varieties are carrying any fruit at all now—and these are not likely to finish properly unless the autumn is unusually good and prolonged.—*Malcolm Macnaughton, Scone Palace Gardens, Perth.*

——Owing to the lateness of the season it is impossible to give any indication of the quality of the fruit crops, as up to now, July 7, only Strawberries are ripe. Apples and Plums promised to be an extra fine crop, but continuous rains and a hail storm did much damage. Wall trees with glass projections where the bloom has been kept dry, show a marked improvement on those without protection. Strawberries were a heavy crop, but much damage was done to the berries by slugs and excessive moisture. *James McGregor, Rossie Priory Gardens, Inchture.*

Stirlingshire.—Small fruits in this district are good. We experienced very bad weather when Strawberries were ripening and the quality of the berries was bad. With the exception of Plums, all fruit trees showed a fair amount of blossom, and although the weather was favourable for the fruits setting, the crops have turned out failures. The badly ripened wood of last year is probably the cause. *James D. Cunningham, Duntreath Castle Gardens, Blanefield.*

Ayrshire.—There was a good show of blossom on all kinds of fruit trees and every prospect of good crops until about the end of April when frost and cold winds caused much damage to the trees. Strawberries, Raspberries and Cherries are fair crops, and we have a few trees of Apples in sheltered positions cropping well. *Daniel Buchanan, Bargany Gardens, Dailly.*

Buteshire.—Owing to the wet autumn of last year, the wood of fruit trees did not ripen, and although there was an excessive amount of blossom on all trees this spring, the flowers were weak and did not set. To make matters worse we had a very cold, wet spring, so that any fruits we have are on the late side and not likely to finish properly. These remarks apply to the larger fruits. Small fruits, although late, are all fairly good. *John J. Davidson, Ardencraig Gardens, Rothesay.*

Dumfriesshire.—Apples and Pears are poor crops and the quality is not good. Gooseberries are not so good as last year, but are an average crop and very good in quality. Black Currants are over the average. It is some years since this crop was so heavy and the fruits are swelling to a fine size. Red and White Currants are good average crops but they always do well here. Strawberries were above the average and the berries were a fine size and the flavour was good; much better than in some former years, although we have not had much sunshine. Our soil is a light, sandy loam, with a gravel and sand subsoil. The ground is very porous but produces good crops. *James MacDonald, Dryfeholme, Lockerbie.*

(*To be continued*).

VEGETABLE GARDEN.

THE CELERY.

(Apium graveolens).

The Celery is a hardy biennial, a native of Britain and Europe generally, abounding in marshy places almost everywhere between Great Britain and Turkey. It is commonly known as Smallage and Ache, the latter name being derived from the French. In its wild state the odour of the plant is strong and offensive, but in the process of cultivation the objectionable qualities have been eliminated, and the plants of any or all of the cultivated forms make an agreeable and healthful food whether boiled, stewed, or served raw as a salad; while the seeds give a very pleasant flavour to soups, or, when ground up with other ingredients, as Celery salt, tempts the appetite and aids digestion.

Miller states that "the seed of this plant (*i.e.*, Smallage) is one of the lesser warm seeds; both the herb and seeds are used in medicine." Smallage seed was always intended by the physician when Apium was prescribed.

Like the Parsley, to which it was formerly supposed to be related, two forms have been developed: the first, the upright growing plant which is blanched by gardeners, and the second the Turnip-rooted form known as Celeriac, a vegetable which has not yet been esteemed at its full value in Britain.

It is not very clear to whom we are indebted for the cultivated Celery, but in all probability it was to the Italians. Miller, in his *Dictionary* gives three varieties thus: "Apium palustre, Smallage or Water Parsley. Apium dulce, ceteri Italorum: Ray's History of Plants; Upright Celery. Apium dulce degener, radice rapacea; Jussieu, Celeriack, or Turnep-rooted Celery."

Respecting the two first-named, Miller states: "Dr. Linnæus has joined the Celery to the Smallage, supposing them to be the same, and the only difference to arise from culture, but herein he is greatly mistaken; for I have cultivated the Smallage in gardens forty years, to try if by art it could possibly be brought to the same goodness as Celery, but have not been able to alter it from its original . . . therefore I make no doubt of its being a distinct species." Regarding the Celery he describes it in his cultural instructions as "the Italian," so it seems reasonable to assume that Italy was the country of origin. A further confirmation of this assumption is furnished by the fact that in the catalogue of Patrick Drummond, seedsman, Edinburgh, for 1754, the Celeries quoted were the Italian and the Turnip-rooted Celeriac.

Respecting the Celeriac (which Miller declines to consider a degeneration), the fact that the only authority quoted by him is Jussieu, seems to the writer to bespeak a French origin.

The number of varieties of Celery put into commerce is legion, but, happily, all may be classed under very few headings for practical purposes. As regards colour, red (many shades), pink, white, and golden embrace the whole; the height varies from very dwarf to very tall; with one exception they are all supposed to be solid, and all, more or less, possess "an excellent nutty flavour," of which it is claimed that the red varieties have the lion's share. Earliness or the reverse is an important point to growers for market, but for all ordinary purposes successional plantings are an easy method of making the necessary provision. It should ever be borne in mind that Celery is very amenable to intelligently generous treatment.

It is hardly within the province of this article to enumerate and describe the one hundred and more varieties which are offered in the various seedsmen's catalogues. Many of them are of necessity synonymous, so that in dealing with a first-class seedsman it is quite safe to rely upon the variety on which he has staked his reputation. There are a few specially distinct varieties to which attention may reasonably be directed. These are the White Plume and its sub-variety Pink Plume, the Golden Self-blanching and its sub-variety the Rose-ribbed Golden. The White Plume is an American variety introduced in 1885 by Peter Henderson of New York. The leaves and stems are naturally of a silvery-white colour, hence it is described as self-blanching, but to have it truly crisp and tender some artificial blanching is needed. It is a rather small, very early variety, and in the U.S.A. it makes its appearance on the hotel tables early in August.

The Americans are very fond of raw Celery, and in my early trips to that country in the '80's, I very often saw guests at good hotels, so soon as they had disposed of the regulation quantity of "ice-water," pour the contents of the salt cellar out on the table cloth and start eating the Celery which was temptingly displayed in long glass dishes full of water kept cool by lumps of sparkling ice, and continue to eat Celery between each course right through the meal! The White Plume, Pink Plume (which only differs from the white in the rosy colour of the ribs); the Paris Golden-yellow, a French variety introduced by Messrs. Vilmorin in 1883, and its rose-ribbed sub-variety were ideal for this purpose. At a later season the Giant Pascal, a popular French variety with a very strong flavour; the Kalamazoo, the Boston Market, and the dwarf, Large-ribbed White, grown by the thousand acres in the States of Michigan, New York, and Ohio, continued the supply. Red Celery does not appear to be so popular in the States as in Great Britain.

The Soup Celery (Fr. *Celeri à couper*) is also a quite distinct variety; it appears to be closely allied to the wild Celery and it is probably one of the earliest developments, for the illustration of cultivated Celery in the *Herbal* of Dodonæus, 1550, might easily be taken for that of a plant of the cutting variety which is so largely grown in Provence to-day. The bulk of this seed is exported to America where part of it is used to flavour all the clear soups served in the hotels which shelter the unhappy "drummer," and another part of it is sown to produce leafage which is used like Parsley for the flavouring of soups and stews. The plant is green in colour, fairly tall, with hollow and very brittle stems.

CELERIAC, OR TURNIP-ROOTED CELERY.

(Apium graveolens rapaceum).

This is a variety with a swollen root and base of the stem, constant in habit; only the bulbous root is eaten.

In some botanical works it is spoken of as a comparatively recent introduction, but as Miller quotes Jussieu (1690) as his authority, it must have been in existence for more than two hundred years. It appears to have been at first regarded as a degeneration, probably because it is prone to throw out suckers and a mass of rooty fibres, and, even under most favourable conditions cannot fairly be described as elegant. It has never been very popular in Britain, although Mr. E. Beckett describes it as a wholesome and excellent vegetable, with very little trouble entailed in its culture. The Paris gardeners favour its culture, and the Large Early Paris is an excellent variety; but Germany has done much better, for in a German catalogue now before me, out of twelve varieties quoted eleven are of German origin. These vary in size from the Apple-shaped, a very smooth, short-leaved variety about the size of a King Pippin Apple, to the Giant Prague which attains the size of a large Turnip.

The roots should be lifted and properly stored before the frost sets in and they will then keep good all the winter. The best varieties are the Early Apple-shaped, Large Early Paris or Erfurt, and the Giant Prague. *S. B. Dicks.*

DWARF BEAN, MASTERPIECE.

We are indebted to Messrs. Sutton and Sons for many good varieties of vegetables and not the least among them is Masterpiece Bean. I have grown this variety for several seasons and have previously spoken of it in high terms. It is the best Dwarf Bean I have ever grown; the pods are long, extremely fleshy, bountifully produced both under glass and in the open and exceptionally tender when cooked.

I now depend entirely on this variety for our season's supply, making several sowings on land that is in good heart, which is essential for the production of good pods.

The soil in these gardens is somewhat light and porous and in periods of dry weather it is mulched with decayed manure between the rows of Beans and watered liberally at intervals to wash the manurial properties of the dung well down to the roots of the plants. This treatment and keeping the pods picked frequently greatly assists in the production of a bounteous crop. *H. Markham, Wrotham Park Gardens, Barnet.*

FRUIT GARDEN.

THE APPLE CROP IN EAST NORFOLK.

Judging by observations made during several short tours through villages and hamlets in East Norfolk, the Apple crop is a good one. Trees noted were for the most part in cottage gardens and farm orchards, although in several market gardens the crop appeared to be well up to the average.

I was unable to make a close inspection of the varieties, but some fine old trees of Blenheim Pippin carrying heavy crops were conspicuous in some of the orchards. Many of the trees had received little attention in the matter of pruning, and one wondered if they had ever been sprayed.

Large Pear trees in many gardens were carrying heavy crops. Black Currants are largely grown in this district and good crops of fine fruits were being gathered. The bushes appeared to be very healthy and for the most part the land was very clean. Raspberries also were being gathered in excellent condition. Soft fruits are placed on the market at Great Yarmouth in perfect condition. I understand that in many cases the fruit is picked direct into the shallow trays in which it is taken to the market stalls.

STRAWBERRIES.

Certain varieties of Strawberries will not grow successfully in all localities. Royal Sovereign is, perhaps, the most successful variety; I have grown this fine Strawberry in Ireland on peaty land, in Berkshire on gravelly soil, in Hertfordshire on medium loam, and in this garden on a poor loam overlaying chalk. In all cases, except during seasons of exceptional drought, it has proved most excellent. The Duke I have not grown. Waterloo fails here after the first season.

Respecting attacks of red spider, the grower who can produce forced Strawberries in quantity and quality without the plants becoming more or less attacked by this pest is indeed fortunate. Even when the best attention and skill is bestowed upon their treatment, it is very rare to find a perfectly clean batch of forced Strawberries.

Is there any advantage in layering the runners into small pots and afterwards potting them on for forcing? Is it not as well to layer them direct in their fruiting pots? I am aware that many growers adopt this latter plan with every success, and it has always seemed to me that a certain amount of labour is saved thereby. *C. Ruse, The Hyde Gardens, near Luton.*

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Gardeners and their Wives.—In reference to the above subject, I should like to write to you about my husband, who has had bad luck for a long time. When single he always used to be quickly suited; he has a very good knowledge of all-round gardening, he has good references, and head gardeners under whom he has worked have been sorry to lose him, for he loves gardening and takes a real interest in his work. He was in his last situation for five years after marriage, and left by his own desire; we took a situation where I was expected to work as well, and unfortunately I was unable to manage my part with a child, as it was harder than I thought (we have a son three-and-a-half years old). So, of course, they found another couple, and had no consideration for us whatever. My husband is working in a market garden at present, but the work is very hard, and we have to pay 12s. 6d. rent for rooms. *A Gardener's Wife.*

Ranunculus gramineus and R. alpestris.—I have always looked on the above species as beautiful and interesting Buttercups, but have little or no hope of finding them wild in Britain, as mentioned by R. E. Arnold in *Gard. Chron.*, Vol. LXXV., p. 337. R. gramineus was admitted into the British flora by Dr. Withering on the strength of some specimens which he received through Mr. Pritchard from North Wales, more than a century-and-a-half ago, but this has not since been confirmed. R. alpestris is said to have been collected by Mr. G. Don on the sides of small streams coming down from the mountains of Clova, Forfarshire, but that classic locality for plants has been hunted by botanists and collectors on the outlook for all sorts of plants, without finding R. alpestris, which may now be regarded as extinct, or that it never was British. *J. F.*

Strawberry The Duke.—A correspondent (see page 65) invites opinions regarding the new Strawberry, The Duke. We grew this variety and Royal Sovereign side by side, on a new bed this year: all maiden plants. My employer was given six fruits of each, the one half-dozen, Royal Sovereign, was numbered one: the other, The Duke, was numbered two. In his opinion No. 1 was by far the best Strawberry. *J. W. Barks, Bletchingley, Surrey.*

—— I have been greatly interested in the remarks made respecting this Strawberry by Mr. Wadds (p. 31) and by Mr. A. W. Pullin (p. 65). I have very carefully tested this variety, and have found it, for all purposes, to be all the introducers claim it to be. I have grown and tested most of the new varieties of Strawberries introduced during the past twenty years, and during that time have found nothing to equal Royal Sovereign for general purposes, until now. The flavour of The Duke is not better than that of Royal Sovereign, but the constitution of the latter is deteriorating fast, whilst The Duke is very robust, full of vigour, crops abundantly, and is equal to what Royal Sovereign was fifteen years ago. Grown side by side, The Duke is also four days earlier. I have, therefore, decided to discard Royal Sovereign altogether, and substitute The Duke. I, like Mr. Pullin, have found no difficulty whatever with attacks of mildew or red spider on Strawberries. These pests generally attack plants with weak constitutions, or those that have received wrong treatment; I feel sure Mr. Wadd's experience must be an isolated one and does not agree with the opinions of others I have discussed this variety with. It would therefore, not be fair to condemn this new Strawberry for these reasons alone. *Lewis Smith, Cadland Park Gardens, Southampton.*

Schizanthus Dawkins' Hybrid.—I enclose photographs of Schizanthuses which were raised from seeds in the gardens of J. S. Daniels, Esq., Lightpill, Stroud, Gloucestershire (gardener Mr. E. Clayfield). The seeds were sown in pans in the third week of September last. When large enough the seedlings were potted on into three-inch and five-inch pots and finally into their flowering pots, which were of seven-inch size. The compost for the final potting consisted of two-thirds loam, one-third leaf-soil and sand. The potting was done with moderate firmness, and only one plant was grown in each pot. The plants were in their final pots by January 31, 1924. Flowers commenced to appear at the end of March and a continuous supply of flowers continued until June. Of two dozen plants selected for growing on no two were alike. The strain was Dawkins' New Dwarf Hybrid. Cool greenhouse treatment was accorded to the plants at all times. *A. W. Bennett.* [We regret the photographs were not suitable for reproduction.—Eds.]

Freesias as Annuals.—Having read with interest the notes on the above subject by Mr. J. Coutts (page 11) and Mr. P. H. Dalrymple (page 48) it may interest readers to have my experience of the growing of coloured Freesias raised from seed. This season I sowed on January 16 a packet of seed in the usual way in seed pans, and germinated the seeds in an intermediate house. Afterwards the seed pans were placed on a shelf in a cool house, and when the plants were three inches high I pricked them off in five-inch pots, placing nine plants in each pot. They were returned to the same shelf, watered carefully and shaded for the first few days. Not one plant failed and they grew sturdily and healthily. At the end of May I placed the pots in a cold frame and by the middle of June flower buds began to appear. I was rather perplexed at this, so I transferred the plants to a shady place on a bed of ashes, amongst some pots of autumn-flowering Liliums, etc. The plants are growing finely, and blooming freely in all colours imaginable. Not a plant failed, and there is every appearance ot them flowering for several weeks to come. Can any reader inform me what will happen next season and what treatment I should give the plants to get them to bloom in the winter of 1925, as I think it very much out of season to have them in bloom at midsummer. It seems to me that there is every possibility of raising these plants for flower beds. Mr. Dalrymple does not advise pricking off the young seedlings. In my case it has proved very satisfactory. I may say I have raised the two older varieties from seed sown early, but on no occasion have I had a flower bud until well on in the winter and then only a low percentage the first season, but excellent results the second. *W. E. Wright, Henstaff Court Gardens, Pontyclun, South Wales.*

Tulip Bases.—Mr. Dykes (page 58) challenges "one or two statements" of mine on page 32. I cannot make out that he has challenged one, unless he would suggest that the stock of Avis Kennicott has not flowers in it with variable bases! I have had Avis Kennicott from more than one source in the past twenty years, and there has always been variation. "How can this be accounted for?" is another question altogether. I have often wondered if the mixture of varieties is the only explanation. Mr. Dykes thinks it is. I would however ask if the change might not be due to "sporting"? Is this impossible? Or is no other cause except a mixture possible? I wonder if any reader can tell me where Avis Kennicott came from? Was it from New England? *Joseph Jacob.*

[Mr. Dykes' statement was "There is no doubt at all that all offsets and stolons form bulbs which, when they flower, produce identical flowers with the same basal pattern or colour.—Eds.]

SOCIETIES.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, July 25th; Committee present: The Rev. J. Crombleholm (in the chair), Messrs. R. Ashworth, A. Burns, J. Evans, J. Howes, J. McCartney, E. W. Thompson and A. Coningsby.

First-Class Certificates.

Cattleya Annette, West Point variety.—From S. Gratrix, Esq. *Lycaste Youngii.*—From Mrs. Bruce and Miss Wrigley. *Stanhopea Bucephalus.*—From P. Smith, Esq.

Awards of Merit.

Odontioda King Manuel, O. Brewii colossa and *Ondontoglossum St. George, var. Blue Bird.*—Both from S. Gratrix, Esq. *Odontoglossum eximium Beaute Celeste.*—From Mrs. Gratrix. *Odontioda Brewii var. rubra.*—From P. Smith, Esq.

Group.

A Silver-Gilt medal was awarded to a miscellaneous collection of Orchids staged by S. Gratrix, Esq., West Point (gr. Mr. J. Howes).

NEWCASTLE AND DISTRICT HORTICULTURAL.

All records were broken by the exhibition of flowers and other garden produce at the monthly meeting of this society held in Collingwood Café, on Tuesday, July 22. Mr. R. E. Richardson presided; the room was filled to its uttermost capacity by the members.

The outstanding feature of the exhibits was a collection of Gooseberries staged by Mr. W. E. Anderson, gardener at Close House, Wylam-on-Tyne. Mr. Anderson showed no fewer than sixty-two trays of Gooseberries, each of a different variety.

In the other exhibits were thirty-six Roses staged by Mr. N. Beveridge, Whickham, and a very fine vase of Delphiniums shown by Mr. C. J. Dillon. The quality of the flowers and the numbers staged constituted a record, three exhibitors gaining full points, a thing that had not happened before. The chairman appealed to the members to give their support to the Newcastle Flower Show to be held on Sept. 2, 3, and 4. On the 26th ult. eighty-seven of the members visited Raby Castle on the occasion of the annual outing. The event was a great success and the members spent a very enjoyable day.

ROYAL HORTICULTURAL.

Awards to Sweet Williams.

The following awards have been made to Sweet Williams by the Royal Horticultural Society, after trial at Wisley.

Awards of Merit.

White, sent by Messrs. Dobbie and Co., Edinburgh; *Pink Beauty*, sent by Messrs. Pennell, Lincoln; *Pink*, sent by Messrs. J. Carter and Co.; *Scarlet Beauty*, sent by Messrs. Dobbie and Co., and Mr. Cullen, Witham; *Crimson*, sent by Messrs. R. Veitch and Son, Exeter; *nigrescens* and *Auricula-eyed Extra Large*, both sent by Messrs. Barr and Sons, London; *Holborn Glory*, sent by Messrs. J. Carter and Co., and Messrs. Watkins and Simpson; *Mixed Hybrids*, sent by Mr. W. J. Unwin, Histon; *Double Mixed Improved*, sent by Messrs. Barr and Sons.

Highly Commended.

Copper King, sent by Messrs. Barr and Sons; Copper Red, sent by Messrs. R. Veitch and Son; Scarlet Beauty (alike with Scarlet Beauty above, sent by Messrs. J. Carter and Co; Dunnett's Dark Crimson, sent by Messrs. Barr and Sons; Auricula-eyed, sent by Messrs. R. Veitch and Son, and Mr. W. H. Simpson, Birmingham; Auricula-eyed (Dean's) sent by Messrs. Barr and Sons; Holborn Glory, sent by Messrs. R. Veitch and Son; Perfection (Hunt's) sent by Messrs. Barr and Sons; Double Mixed, sent by Mr. W. H. Simpson.

Award to Ranunculus.

Award of Merit.

Ranunculus asiaticus, Dr. Ragionieri's Strain, sent by Dr. Attilio Ragionieri, Castello (Firenze) Italy. (See *Gard. Chron.*, July 26, p. 59, Figs. 20, 21, 24).

Awards to Early Strawberries.

Award of Merit.

King George (for cropping and quality), sent by Mr. W. G. Holmes, Tain.

Highly Commended.

The Duke (for cropping), sent by Mr. R. Reed, Wisboch; Early Evern (Rufus of Miller of Wisbech, Tuckswood Early of Holmes), raised on Continent as Deutsch Evern (for earliness and cropping), from Holland; Boreal Giant (for early preserving), sent by Mr. Robert Holmes, Norwich.

Commended.

Sir Douglas Haig (for flavour), sent by Messrs. Laxton Bros., Bedford; Invicta (for flavour), sent by Mr. F. B. Longley, Hythe; Dessert (for cropping), sent by Messrs. Laxton Bros., Bedford; John Ruskin (for earliness and cropping), sent by Mr. R. Johnstone (Annan).

Trials of Currants.

Awards of Merit.

Florence (black), sent by Sir Charles Nall-Cain, Brocket Hall (gr. Mr. T. Pateman). *Invincible Giant Prolific* (black), sent by Messrs. Storrie and Storrie, Glencarse, Perthshire. *Big Red Dutch* (red), sent by Messrs. B. Ruys, Dedemsvaart, Holland.

Highly Commended.

Orr's Seedling (black), sent by Mr. Wm. Orr, Carnforth. Long Bunch White (white), sent by Messrs. B. Ruys, Dedemsvaart, Holland.

YORKSHIRE AGRICULTURAL.

July 23, 24 and 25, The horticultural section of this important show was again a great success and one of the most popular features of the exhibition.

Very keen competition obtained in the various classes. There were three entries for a group of miscellaneous plants in and out of bloom, arranged on a space of 350 square feet. Messrs. J. Cypher and Sons won with a superb display, followed by Mr. W. A. Holmes, Chesterfield, with a group arranged with great skill, and Mr. T. M. Petch, Highfield Nursery, Great Horton, Bradford, was third. The first prize for a collection of cut sprays of Carnations arranged on a space fifteen feet by five feet, was easily won by Mr. C. Engelmann.

There were five entries in the class for a collection of hardy perennial plants and cut blooms in a space thirty feet by ten feet. The exhibits made a gorgeous display and again proved to be the most interesting class in the show. Messrs. Artindale and Sons, Sheffield, were awarded the first prize for a light and well arranged exhibit; second, Messrs. Harkness and Sons, Bedale, for flowers of wonderful quality but much too crowded in arrangement.

The first prize for a collection of Sweet Peas arranged to produce the best effect on a space twenty feet by five feet, was won by Mr. J. Stevenson, Wimbourne, Dorset; second Messrs. J. H. King and Sons, Coggeshall, Essex.

The class for a collection of twelve distinct varieties of Sweet Peas was keenly contested, and the first prize was again won by Mr. J. STEVENSON; second, A. D. H. WATT, Esq., Bishop Burton Hall, Beverley (gr., Mr. G. Wilson). Mr. T. ROBINSON, Porchester Nurseries, Nottingham, was first for a collection of cut Roses. Trade exhibits were numerous and good, the most outstanding exhibit was of Roses, staged by Messrs. ALEX. DICKSON AND SONS, Newtownards, for which a large Gold Medal was awarded; the same firm was also awarded another Gold Medal for a choice exhibit of Sweet Peas.

Large Gold Medals were awarded Messrs. SUTTON AND SONS, Reading, for a group of fruits, flowers and vegetables, and Messrs. ALLWOOD, BROS., Hayward Heath, for Carnations, and to Messrs. J. BACKHOUSE AND SONS, York, for a rock-garden arranged outside the tents.

Gold Medals were awarded to Messrs. HERD BROS., Penrith, for Sweet Peas; to Messrs. JOHN FORBES AND SON, Hawick, for Pentstemons, Phloxes, and other hardy flowers; and to Messrs. W. ARTINDALE AND SON for a group of hardy flowers.

Silver Medals were awarded to Messrs. ISAAC HOUSE AND SONS, Westbury-on-Trym, for Scabious, and Messrs. MAXWELL AND BEALE, Broadstone, for hardy plants.

HANLEY FLORAL FETE.

JULY 22, 23 and 24.—This once important Show suffered heavily during and after the war period and serious depletions were made in the reserve fund. This year a special effort was made to reduce an adverse balance by holding a three days show instead of two. The great advance in the number of entries, and in the quality of the exhibits must have given great encouragement to those responsible for the holding of the show, including the Chairman Mr. W. H. Dodds and the Secretary Mr. Wm. Poulson. The opening ceremony was performed by the Countess of Harrowby and she was supported by the Mayor and Council of Stoke-on-Trent. A large number of the general public and Dominion visitors now in the Potteries were present at the opening ceremony. The exhibits, both the competitive and trade, were a great improvement on any previous year since the war.

Messrs. J. CYPHER AND SONS staged a fine group of flowering and foliage plants which was awarded the first prize of £30 and the Shirley Silver Challenge Cup of the value of 30 guineas offered for the best exhibit in the show. Other most notable exhibits were the same firm's group of ornamental foliage plants; Messrs. W. JENKINSON'S, Newcastle, floral work and cut flowers; Messrs. WEBB AND SONS', Stourbridge, exhibit of Sweet Peas, fruit and vegetables, and Mr. C. ENGELMANN'S group of Carnations. The prizes for Roses, Sweet Peas, hardy flowers, bouquets, vegetables and fruits, were all keenly contested.

Mr. CHAS. GREGORY, Chilwell, Notts, was placed first in the classes for thirty-six Roses, twenty-four Roses, twelve new Roses, twenty-four Hybrid Tea Roses, twenty-four Tea and Noisette Roses, twelve Yellow Roses, twelve Pink Roses, and nine distinct varieties of Perpetual-flowering Roses; he was followed closely in each class by Mr. HENRY DREW, Longworth, Berks, who was first for twelve red or crimson Roses; Messrs. PALMER AND SONS, Newcastle, won the first prize in the class for twelve white Roses.

The best dinner table decorated with Roses and foliage was arranged by Mrs. A. J. BLAIR, Congleton; second, Miss HALLIDAY. Sir G. H. KENDRICK (gr. Mr. J. Macdonald) had the best table decorated with flowers other than Roses. Messrs. WM. LOWE AND SONS, Beeston, excelled in the class for a collection of hardy perennials. Sir R. BAKER, Blandford (gr. Mr. Usher), won the first prize for fifteen varieties of Sweet Peas, twelve varieties of Sweet Peas, and six varieties of Sweet Peas respectively; followed in each class by Mr. R. MADELEY, Market Drayton. The best display of cut Carnations was shown by Mr. C. ENGELMANN. Mrs. T. S. HALL, Chard, was first for twelve dishes of fruit, six dishes of fruit, two black and two white bunches of Grapes, six Nectarines, one Melon, and nine dishes of vegetables.

ANSWERS TO CORRESPONDENTS.

AZALEA MOLLIS: *W. R. T.* There is no disease present on the Azalea branch you forwarded. As you suggest, the unhealthiness of the trees may be due to the coldness of the soil, and it would be advisable to mulch the bed with peat or leaf-mould and to assist the trees with applications of liquid farmyard manure.

MEDIC ON TENNIS COURTS: *D. G. H.* Medic is a very troublesome weed to get rid of and if the patches are not very large it is advisable to cut them out and to lay down fresh, clean turf. This operation should be performed in the autumn or spring. You may, during dry weather, try applications of sulphate of ammonia procured from the local gas works and use it at the rate of about one pound per rod. On no account should lime, or manures containing lime, such as basic slag be applied to the grass.

MELONS NETTING EARLY: *P. J. B.* There is little or nothing wrong with your Melons; Sutton's A1 commences to net early, but continues to swell until ripening takes place. In dull or damp weather, gradually reduce the amount of moisture in the air and at the roots, and increase the amount of air admitted through the early part of the day. The appearance of cracking in the skin is due to an excess of atmospheric moisture, with this reduced your Melons should finish well, as your general treatment appears to be quite correct.

NAMES OF PLANTS: *E. H., Portobello.* Probably Rose Rayon d'Or. *S.S.* 1, Kolreuteria paniculata; 2, Liriodendron tulipifera (Tulip Tree); 3, Catalpa bignonioides; 4, Olearia macrondonta; 5, Azara microphylla; 6, Rhus Cotinus (Smoke tree), 7, Viburnum Lantana (Wayfaring tree). *W.H.B.* 1, Euonymus europaeus; 2, 3, 6 and 7, too withered to identify; 4, Spiraea Anthony Waterer; 5, Cornus macrophylla; 8, Philadelphus Manteau d'Hermine; 9, Staphylea colchica; 10, Cassinia fulvida; 11, Buddleia globosa; 12, Veronica Andersoni var. variegata. *Yeaton.* 1 too small to identify; 2, Lychnis coronaria; 3, Cedrus atlantica var. glauca; 4, Aristotelia Macqui var. variegata; 5, Lonicera quinquelocularis; 6, Erythraea centaurium; 7, Lonicera nitida. *F.D.* 1, Codiaeum Maurice Lownier; 2, C. Baron James de Rothschild; 3, C. Davisii; 4, C. B. Comte; 5, C. Countess; 6, C. Mrs. Swan; 7, C. Evansianus; 8, C. Queen Victoria; 9, not recognised; 10, C. ruberrimus; 11, C. Palais de Glace; 12, C. Golden Ring. *A.H.* Sedum spurium var. alba. *B.S.* Chimonanthus fragrans.

PEA FOR NAMING: *L. G. W.* The specimen sent is a purple-podded variety of the ordinary culinary Pea, a curious but not very useful variety.

PEACH LEAVES DISEASED: *M. H.* The complaint affecting your Peach tree is known as Shot-hole disease, caused by the fungus Cercospora circumscissa. Gather and burn all the diseased leaves and spray the tree with self-boiled lime and sulphur compound.

PEACH LEAF CURL: *H. W. J.* Your Peach leaves are affected with the fungus Exoascus deformans. This disease is always most in evidence when there is a sudden fall in temperature and especially when cold winds prevail, but it is checked by an increase of temperature. The affected leaves should be removed and burnt. Spraying the trees with Burgundy mixture just before the leaf buds burst is a preventive measure that has proved eminently satisfactory; the mixture is rendered more effective if three-quarters of a pint of milk is added to every three gallons, as this addition increases its adhesiveness.

PRUNING SHRUBS: *H. S. B.* In pruning shrubs, where the object is to secure new growths from the base, it is advisable to cut away the entire flower shoots so soon as the blooms are over. By this means the vigour of the plant will be thrown into the new growths and the shrubs can thereby be kept within a very small compass. Philadelphus, Cytisus and other shrubs may be so treated. Flowering trees and shrubs may be divided roughly into two groups, those that flower on the young growths and those that flower on the wood of the previous year. The first group should be pruned during the winter and early spring before growth commences and, if necessary, the previous year's wood may be pruned hard to within a few buds. It is advisable to cut out the old wood of the members of the second group so soon as it has finished flowering.

SILVER LEAF DISEASE OF APPLES: *E. B., Suffolk.* The shoots of Apples are affected with Silver leaf disease and your only course is to remove all affected wood and dress the wounds with Stockholm tar. If the tree is badly affected, your best course is to dig it up and burn it.

SHOT-HOLE DISEASE OF ANTIRRHINUM: *H.G.R.* The Antirrhinum leaves are affected by the shot-hole disease caused by a species of Cercospora (?). The plants should be sprayed every two or three days with liver of sulphur, 1 oz. to 3 gallons of water, if applied in cool, damp weather, but the solution should be diluted to 1 oz. in six or seven gallons of water in bright, hot weather. Sufficient soft soap to make a good lather should be added to secure a thorough wetting of the plant, especially the upper surface of the leaves. Dusting the plants and the surface of the soil from time to time with flowers of sulphur is to be recommended. All dead and dying plants should be removed and burnt immediately and Antirrhinums should not be grown a second year on infected land.

TOMATO BLACK ROT: *W. R.* The Tomatos are affected by the fungus known as Black Rot. It is believed that the fungus, being a wound parasite, gains an entrance to the fruit through minute cracks or punctures in the skin. Extremes with respect to watering and the use of green manure, or anything that is likely to cause the fruits to crack, should be guarded against. All fruits showing any signs of the disease sould be removed and burnt, and the plants sprayed occasionally with potassium sulphide, especially when they are setting their fruits. All the ventilators in the house should be opened on every favourable occasion; be careful to guard against an excess of moisture in the atmosphere.

WILLOW USED BY MARKET GARDENERS: *H. R.* The Willow used by market gardeners for tying various things is chiefly, if not always, the Golden Osier or Golden-barked Willow (Salix alba vitellina). When the bushes are stooled every year the lower half of the twigs or shoots is yellow, and the upper half red in autumn and winter. On old trees the bark is wholly yellow on all the young growths. We have seen the twigs of Salix purpurea used by gardeners. Both of the above are obtainable from Messrs. J. Cheal and Sons, Crawley, Sussex, and doubtless, other nurserymen.

Communications Received.—N. O.—C. H. N.—G. E. R.—North Riding.—T. S.—S. T.—T. G. H.—D. R. W.—H. S.—J. A. M.

THE
Gardeners' Chronicle

No. 1964—*SATURDAY, AUGUST* 16, 1924.

CONTENTS.

Alps, a novice in the ... 113
Apple blossom weevil ... 106
Bermondsey flower show 103
Books, notices of—
  Rhododendrons ... 105
Bulb garden—
  Scarlet, crimson and red Tulips 110
Colombo garden, a ... 112
Crops, acreage under ... 107
Epipogon epipogium ... 114
Fruit crops, remarks on the condition of the 117
Fruit Register—
  Early Apples 118
"Gardeners' Chronicle" seventy-five years ago 107
Garden notes from S.W. Scotland 111
Glasgow show 107
Hardy flower border—
  Chrysogonum virginianum 107
  Eryngium 107
Horticulture at the British Empire Exhibition 111
Imperial Botanical Conference 116
Indoor plants—
  Begonia Lloydii ... 109
  Marantas 109
MacGregor, Mr. D. ... 106
Monetary gift to an agricultural college ... 106
Obituary—
  Malby, Reginald ... 120
Rhododendrons 116
Rose garden, the—
  Rose season in southern Scotland 115
Sandy show 106
Societies—
  National Rose ... 120
  Royal Horticultural 118
  Royal Lancashire ... 120
Vegetable garden—
  Spring Cabbages ... 118
Week's Work, the ... 108

ILLUSTRATIONS.

Begonia Lloydii, varieties of 109
Chrysogonum virginianum 107
Colombo garden, a: entrance gates to, 112; formal arrangement of beds and lawns in, 115; scene in 113
MacGregor, Mr. D., portrait of 106

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 61·0.

Actual Temperature:—
Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 13, 10 a.m.: Bar. 29·8.: temp. 64°. Weather, Fine.

Rhododendrons.

"Since 1916 great strides have been made by amateurs, both in addition of hybrids that prolong our flowering season, and in the discovery of new species by the intrepid travellers, George Forrest, Captain Kingdon Ward and the late Reginald Farrer. It seemed to me that all this mass of new material should be consolidated with fresh matter, such as the behaviour of the various species under cultivation, and brought up to date, so that the student may find in one volume a concise account of what we now know of the genus and its hybrids." Here we have the motive for the publication, after a comparatively short interval, of a second volume on Rhododendrons,* a volume as sumptuous as its predecessor, and even more highly priced—surely, in these bad times, a tribute to the courageous spirit alike of author and publisher. The former makes it clear that he would have refrained from attempting this second volume had he not had at his disposal the material already published on Rhododendron by the late Sir Isaac Bayley Balfour—to whose monumental work he pays homage—and to a more limited extent, by Sir Isaac's successor in the Regius Keeper's chair at Edinburgh. The author has wisely drawn on this material for the major part of so much of the book as has scientific value, and those who did not follow Sir Isaac's work on Rhododendrons closely during the last year or two of his life will find ample evidence of it in this book. Out of a total of about 327 species now enumerated and not included in the first volume, the technical descriptions of no fewer than 280 are from the hands of Sir Isaac and his collaborators, having been published from time to time in the *Notes* of the Edinburgh Botanic Garden. The majority of the descriptions of recent species reappears in the original form, but wherever possible, the author has added observations of his own or furnished by other authorities, as to the behaviour of the species under cultivation. Such observations are perforce of a tentative nature, and in only a few instances can they be of material value to cultivators, for the excellent reason that where the species are in cultivation, sufficient time has not elapsed for sound judgments to be formed of the merits of more than a few. That, indeed, is necessarily a difficulty confronting all investigators and cultivators who deal with the newer aspects of a genus which is in the immature and undigested condition of Rhododendrons at the present time, and it explains the absence of any cultural notes at all in the case of nearly three hundred new species described in the book. The ultimate growth of a large proportion of the newer Rhododendrons, and their merits from the gardener's point of view, are largely matters of guess-work. Except that a hard winter or a prolonged drought will settle the question in the case of many species, only the handful of men who have first-hand knowledge of the plants in their natural habitat, can form the faintest mental picture of what many of such as survive will be like in fifty years time, when few of the enthusiastic cultivators of the present day are likely to be alive. And if we are to judge by the Himalayan species, now, apparently, in their prime in the representative collections in Britain, that is about the period which must elapse, in the case of many species, before final judgment can be passed on them. That, however, will not deter the present generation from extracting much instruction and enjoyment from the cultivation of the various species and hybrids, and if many of them will take an age to reach maturity, there are plenty of the quicker-growing, smaller Rhododendrons to go on with. In the case of a few of the Wilsonian and earlier Forrestian species, the interval since the publication of the first volume has enabled the author to supplement the information furnished therein. Of that magnificent species, R. sino-grande, for instance, the author is now a little less guarded than when he wrote in the first volume (1917) that it was too tender for the home, south and eastern counties. But we are not convinced that his earlier judgment was at fault, for though there are still comparatively few specimens in the areas named, the experience of several amateurs, during last winter, goes to show that when next the country is really frost-bound, R. sino-grande will have a hard time, wherever it is. The same may be said without hesitation of many other of the new Asiatic species, both large and small-leaved, and had the publication of the book been delayed for six months, it would have been possible to include in it observations of importance on the effects of the prolonged, harsh winter of 1923-4. The hardiness of Chinese Rhododendrons is a point on which much uncertainty necessarily prevails, and is not made easier of determination for the general mass of Rhododendron growers by the fact that the majority of interested amateurs under whose hands the new species are being tested, carry on their gardening operations in circumstances exceptionally favourable to the genus. It is true that some species are in cultivation in the national gardens, where all may see them, but the atmospheric conditions make Kew almost impossible for Rhododendrons, while Edinburgh is far from ideal. The author is rightly enthusiastic over R. auriculatum, and he records the important observation that while some plants of the species make their autumn growth in early August, others are a month later. Mr. Millais wisely insists that the latter plants are useless for northern districts because the immature growth is almost certain to be damaged by autumn frosts, and so it behoves all northerners experimenting with R. auriculatum to choose the form which makes its autumn growth betimes. But there are variations of one kind or another in numberless species, and so we have the phenomenon of the "best form" of this species or that, of which the uninstructed amateur, and frequently the nurseryman as well, as yet knows nothing. R. Augustinii, R. decorum, R. haematodes, R. Fortunei, and R. orbiculare, among them, are but a few species furnishing familiar examples of this. That fine mid-summer flowering species, R. discolor, comes in again for praise, and deserves all that anyone can give it, for it will probably prove a better, all-round, late-flowering plant than R. auriculatum. R. eriogynum is another late-flowering species which carries the brilliant colour of R. haematodes on past midsummer. The author suggests that it may perhaps grow out of a certain tenderness to late frosts which hampers it at present, and it is certainly the case that many plants, and not only Rhododendrons, withstand cold better in adolescence than in youth. The author's method of meeting such juvenile tenderness is to winter the plants under glass for the first few years; but even so, a hard winter would probably finish them later on. Of older species which are elaborated in the present volume, R. decorum has been graded into nine distinct varieties, and the interesting suggestion is made that the species runs into R. discolor. Some forms of this splendid garden species which Forrest found in 1906 on the hot, dry, limestone slopes of the Tali range have already proved their worth in sun-exposed positions on calcareous ground, and those are the forms which should bear ordinary garden treatment better than others. New and interesting light is thrown on the much discussed origin of Pink Pearl (p. 151), and the historical collections at Valewood and Littleworth Cross are more adequately dealt with (p. 150) than was the case in the first volume. There cannot be another garden in the country where the original R. Griffithianum hybrids of the late James Mangles have been allowed to grow as they pleased for nearly half a century, as at Valewood, where he made the crosses. As an example of the expansion of knowedge following keen investigation, R. obtusum—as we have now to call our old friend Azalea indica—has eight columns devoted to it (p. 197), the whole based on the patient researches of Mr. E. H. Wilson* into the origin of the Kirishima and Kurume Azaleas. And A. indica is not the only one to be robbed of an old name, for according to Mr. Wilson R. rhombicum should now be called R. reticulatum, and R. dilatatum becomes a variety of it (p. 222). Again, the beautiful rose-pink form of R. quinquefolium, which can hardly be so rare as the author imagines, is really R. pentaphyllum (p. 206). R. Simsii, another Azalea long confused with R. indicum of Japan, but, as Mr. Wilson has found, not a native of that country but of China, is given specific rank (p. 237). The synonymy of R. viscosum, the "Swamp Honeysuckle," has also been investigated, and eight varieties assigned to it ; and among other changes, Mr. Wilson would have us know that the old R. ledifolium is properly referred to R. mucronatum.

---

* *Rhododendrons and the Various Hybrids.* Second Series. By J. G. Millais. Longmans, Green and Co., 39, Paternoster Row, E.C. 4. Price £10 10s. net.

* *A Monograph of Azaleas.*

The opening chapter on "Modern Shrub Gardening" will be read with interest by practised gardeners, and with profit by those who have yet to gain their experience. The subject takes the author beyond the immediate sphere of the book, but he handles it with ripened knowledge derived from the acute observation of the trained naturalist, tempered with the philosophy of the old gardener. Occasionally, his enthusiasm for his subject runs away with his pen, as when (p. 11) he writes . . . . . "just as some day every garden in England and Scotland will be full of R. discolor and R. auriculatum. But the day is not yet." Of the illustrations with which the book abounds, and which, incidentally add to its bulk and weight, which is 9½ lbs., it is sufficient to say that in the main, the collotype and half-tone plates are entirely adequate, while some are supremely good. A book of this character, however, is surely worthy of some more satisfying method of colour reproduction than photography seems able at present to afford ; and those who know the fine work Miss L. Snelling has done on Rhododendrons under Sir I. Bayley Balfour's guiding hand, may be permitted to hope that some of it may eventually be reproduced by chromo-lithography. More attention has been given to proof reading than was apparent in the first volume, but no more than before to the compilation of the index. The edition is limited to the modest number of 550 copies, and it is not unreasonable to expect that, in the language of the Stock Exchange, it will soon be at a premium.

Monetary Gift to an Agricultural College.—The Surveyors' Institute has made a grant of two-hundred-and-fifty guineas to the Royal Agricultural College, Cirencester, in support of a fund for the enlargement of the college. The curriculum of this Agricultural College is intended to place business methods in the organisation of production and of distribution as of chief importance and in accordance with this object students are given only two years instruction at the College, which is followed by a full twelve month's work on an approved commercial farm for the special purpose of gaining practical knowledge under commercial conditions.

Sandy Show.—Mrs. Graves, of Sandye Place, Sandy, Bedfordshire, has again granted permission for the Sandy Show to be held in her beautiful Park. The forthcoming show will be the fifty-first held by the local Society, and it will take place on August 28. A liberal programme has been arranged, and in addition to the horticultural features there will be such attractions as displays of needlework, exhibits of honey, bread, eggs, dogs, poultry, pigeons and rabbits, with good music throughout the day and dancing in the evening.

Trial of Lettuces under Glass.—A trial of Lettuce for growing under glass will be carried out by the Royal Horticultural Society at Wisley during the coming winter. Entry forms may be obtained from the Director, R.H.S. Gardens, Wisley, Ripley, Surrey, to whom one packet of seeds of each variety for the trial (to include only varieties suitable for cultivation in winter under glass) should be sent to reach him on or before August 30.

Mr. D. MacGregor.—Twenty years ago Shanghai was a comparatively small place, where gardening was of a primitive character and the public parks extended to only a few acres. Now, however, Shanghai has increased in size and several hundreds of private gardens have been designed and planted and there are two public parks of fifty acres extent each, one of ten acres and one of eight acres, in addition to a cemetery managed on garden lines, ten minor spaces and twenty-five gardens attached to municipal buildings, schools and hospitals. This immense improvement in horticultural affairs is due to the skill and energy of Mr. D. Macgregor, Superintendent of the Parks and Open Spaces, who had to inaugurate a parks department in a strange land and endeavour to meet the taste of representatives of no fewer than twenty nationalities. Mr. MacGregor has accomplished wonderful work in Shanghai and this is fully recognised by visitors from other countries, as well as by the inhabitants. He laid the foundation of his success at the Heriot-Watt College, Edinburgh, where he took a three years' course in natural science and agriculture, including horticulture and arboriculture, winning first-class certificates in each subject, and various class medals. This course not only stimulated his powers of observation, but developed initiative—a point of immense importance to a pioneer. After serving the usual apprenticeship, Mr. MacGregor spent three years at Dalkeith Palace gardens under the late Mr. Malcolm Dunn, who took a great interest in his promising pupil. From Dalkeith he went to Kew, where he became successively deputy-foreman in the Flower Garden and in the Temperate House; he took full advantage of the opportunities Kew afforded for extending his knowledge of plants and of botany. When only twenty-five years of age he was appointed Superintendent of Parks and Open Spaces at Shanghai and, as already indicated, he has made "the desert blossom as a Rose." His energy is wonderful. When nineteen years of age he won the Royal Horticultural Society's First Class Certificate and while at Dalkeith he became a regular contributor to *The Gardening World*. During his earlier years at Shanghai he conducted classes for gardening, chiefly for the enlightenment of native gardeners. He has paid considerable attention, and successfully, to the improvement of Cotton, and at present he is experimenting with Potatos, having in stock every variety listed in Messrs. Dobbie and Co.'s catalogue, indeed, he has under observation about seven acres of vegetables and last year his notes on experimental culture extended to 7,851 entries. On occasion he has collected herbarium specimens in neighbouring districts and Prunus MacGregorianum (*Plantae Wilsoniae*) is named after him. In 1909 he visited the parks of the principal cities of America and Great Britain and lately he has resumed the position of hon. secretary to the Shanghai Horticultural Society, a post he previously held for twelve years. It may be gathered from this brief appreciation that Mr. MacGregor is a man of outstanding ability, and one who has made his mark in a far eastern city by developing its horticultural possibilities and creating a love for gardening.

MR. D. MACGREGOR.

Apple Blossom Weevil.—Among the numerous insect pests of the Apple and Pear the Apple blossom weevil, Anthonomus pomorum, holds a conspicuous place. The evil which it does is wide-spread and the maleficent effects of the larva in destroying flower buds have been known for more than one hundred years. Season plays a large part in determining the amount of damage done by this pest. The females who are the origin of the trouble lay their eggs in a very leisurely manner. Theobald states that oviposition takes three-quarters of an hour. Hence, if Apple or Pear blossom is opening rapidly under the influence of warm, sunny weather, the female weevil is robbed of its chance of laying its eggs in many blossoms. With a bad spring, therefore, the pest is at its worst and the damage which it does in Apple orchards is very great indeed. All sorts of remedies have been advised and tried. Grease banding is ineffectual for this particular pest, and spraying with lead arsenate before the blossom buds open appears not to have resulted in mitigating the pest. In view of the failure of these methods, Mr. Massee has made a very thorough investigation of the efficacy of an old and simple method—that of trapping by means of sacking bands. As the details of his observations show this method deserves to be tried in all orchards in which the pest occurs—and there must be few where it does not. To trap best, the sacking should be wound twice about the tree and should be placed as high up the main stem—close to the fork—as possible. Since the weevil begins its migratory walk from the tree to the ground early in the year the sacking should be placed in position early—if possible by the end of May. And since the migration of the weevils continues till late in the autumn the sacking should be left in its place until December or even January, when it may be removed and the catch of weevils disposed of. Since the use of the sacking is to trap weevils both emigrating from and immigrating to the trees the ties should be made about the middle. The method is not without its uses in the case of other pests, and at the end of the season the sacking will be found to be a very interesting entomological museum. Earwigs congregate there and in warm weather large numbers of green fly take shelter in the sacking. They attract their enemy, the larva of Syrphid flies, and in the spring Mr. Massee has noticed that a clay-coloured weevil—a pest of newly-grafted stocks—may be found in numbers. Wherefore it would seem well worth while for the fruit grower to give a trial to this very simple method of ridding his trees of some of their pests.

Bermondsey Flower Show.—The Exhibition Committee (consisting of the Council and members of the Beautification Committee of the Bermondsey and Rotherhithe Horticultural Society) is appealing for funds for the annual exhibition of flowers, fruit and vegetables, to be held in the Bermondsey Town Hall, on September 5 and 6, 1924. These exhibitions are growing very popular and have provided a much needed stimulant to the inhabitants, who now vie with each other in the cultivation of flowers and plants and who are thus helping in the general scheme of beautifying the streets in the borough. Last year Bermondsey won the Daily Telegraph prize and also the London Gardens Guild medal for the best window box in the All London Competition. Donations should be addressed to the Hon Treasurer, W. L. Buxton, Esq., Town Hall, Spa Road, S.E.16., and marked "Flower Show."

Glasgow Show.—Although August 23 is the last day for receiving entries for the great flower show to be held in the Kelvin Hall, Glasgow, on September 2, 3, 4 and 5, it is now evident that the exhibition will be the largest yet held under the joint auspices of the Glasgow Corporation and the Glasgow and West of Scotland Horticultural Society. The promise of H.R.H. The Duchess of York to open the show has added considerably to the interest which is being taken in the exhibition through the South of Scotland and the North of England. We may remind our readers that apart from cups, trophies and medals, the cash prizes offered amount to £1,500, and that this will be the first occasion on which classes have been provided for Orchids.

Acreage under Crops.—The preliminary tabulation of the agricultural returns of the Board of Agriculture collected on 4th June, 1924, in respect of agricultural holdings above one acre in England and Wales shows that the total area under crops and grass is 25,873,000 acres, comprising 10,928,000 acres of arable land and 14,945,000 acres of permanent grass. The acreage under vegetables includes: Peas, 171,500 acres; Potatos, 451,800 acres; Turnips and Swedes, 831,800 acres; Cabbages, Savoys and Kales, 80,100 acres; Brussels Sprouts, 20,700 acres; Cauliflower or Broccoli, 12,400 acres; Carrots, 10,700 acres; and Onions, 2,900 acres.

Appointments for the Ensuing Week.—Tuesday, August 19: Winchester Horticultural Society's lecture. Wednesday, August 20: Shrewsbury Floral Fête (2 days); Henley Horticultural Society's show; Morley and District Paxton Society's meeting. Thursday, August 21: Honiton and District Horticultural Society's show; Appin flower show; Carnwath flower show; Kilcreggan, Cove and Roseneath flower show; Peebles flower show. Saturday, August 23—Burnley Horticultural Society's show; Beattock flower show; Carstairs flower show; Glencairn and Tynron flower show; Innerleithen and Traquair flower show; Maybole flower show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Decayed Wood as a Substitute for Peat.*—A bed for American plants was made of peat soil some time since, and I believe no peat has since been added; but every autumn the plants received the same treatment as the herbaceous plants adjoining. A large quantity of decayed leaves and sticks was put on the bed and forked lightly in—a practice which I would not adopt, for the bed was filled with Azalea, Kalmias, Rhododendrons and Heaths, whose roots are small and in masses, and should not be disturbed. However, these plants grew luxuriantly and flowered beautifully. I have applied leaf soil to Rhododendrons and the tender kinds of Azaleas in pots with advantage. But I have also seen it used for Rhododendrons with disadvantage. About six weeks ago I turned eighteen Rhododendrons out of pots which they had occupied nearly two years. They had been potted in two-thirds leaf soil and the remainder peat.. These plants, one and all, had not made a single root since the time they were potted. They had existed on the soil contained in the ball. The plants should have taken root in a peaty soil, and leaf soil should have been applied as a top dressing. *The Gardener, Thorpe Perrow, Gard. Chron., August* 18, 1849.

HARDY FLOWER BORDER.

ERYNGIUM.

The Eryngiums are storm-resisting plants and among the finest of hardy border perennials. They are known as Sea Hollies and should be represented in all choice collections of hardy plants. Their stout, upright stems are of vigorous constitution, and are uninjured by the high winds of late summer and autumn, thus rendering them most desirable subjects for border decoration in wind-swept localities.

The various species and hybrids constitute a highly characteristic group of very ornamental plants remarkable for their lasting qualities and for their rigid elegance and contour. Planted in threes and fives they have the appearance of a huge, spiny bush, their stout stems, spiny leaves and bracts presenting a very attractive appearance of silvery grey and metallic steely-blue.

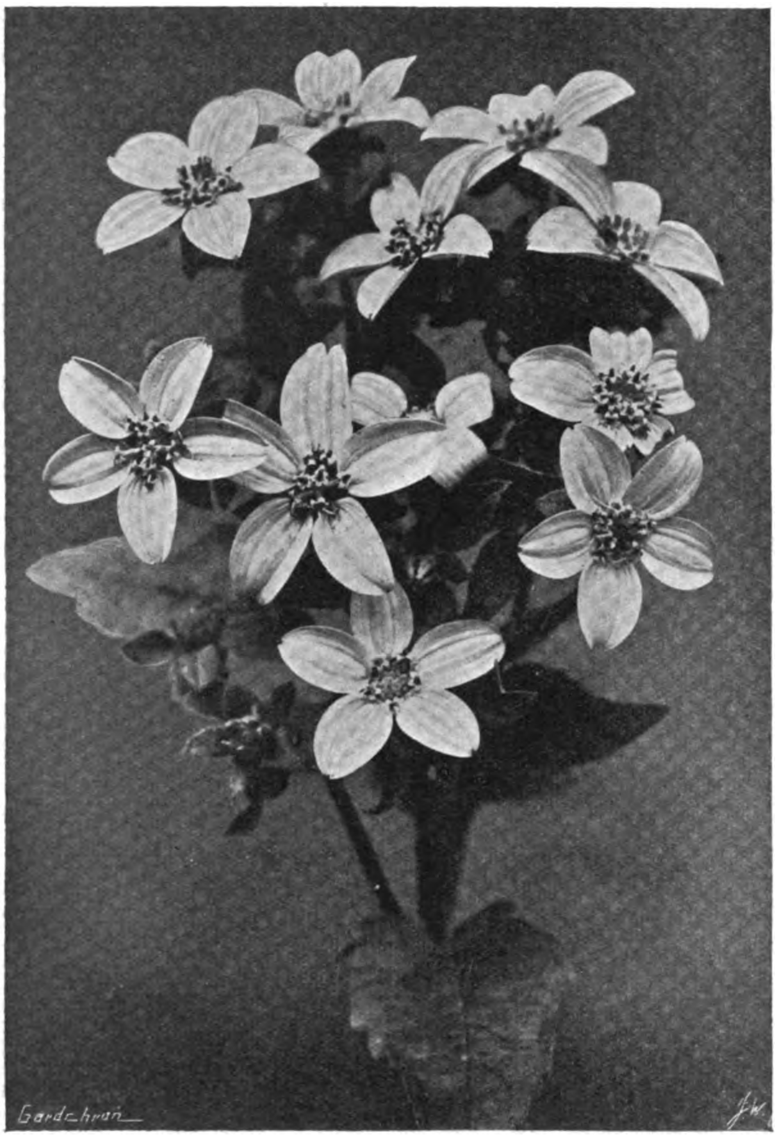


FIG. 36.—CHRYSOGONUM VIRGINIANUM.

Eryngiums of outstanding merit are E. Violette, a beautiful hybrid with large, involucral bracts of brilliant violet-purple, and large, spiny, radical leaves; E. Zabellii, a very attractive plant, with large, radical leaves and bright amethyst-blue flowers, or involucres; E. Oliverianum superbum, similar to the last but with darker involucre; E. alpinum, which is one of the most attractive of the species on account of its large and broadly cordate, radical leaves, and much divided involucral bracts of a pleasing shade of steel-blue; and E. Bourgatii, which has very spiny, much-divided leaves, prettily blotched white, and steel-blue bracts. All the above attain a height of from two feet to three feet. E. pandanifolium is a tall and noble plant from six feet to eight feet high, with Pandanus-like leaves. E. agavifolium is also a tall grower and attractive, with branching heads of whitish inflorescences; these two last are grand subjects for the sub-tropical garden. *W. Logan.*

CHRYSOGONUM VIRGINIANUM.

Chrysogonum is a small genus of Compositae, of which the chief garden species is C. virginianum (see Fig. 36). This is a useful border plant, as contrary to many of the Composites which flower in autumn, this species flowers in May, and although it has no pretensions to great beauty, it is useful at a time when border flowers are none too plentiful.

The flowering stems attain a height of about one foot and they develop a number of flower heads either solitary or peduncled in the axils, while some of them may be terminal. The foliage is ovate and mostly obtuse, and the margins are deeply crenate. The petioles are longer than the leaves.

The plant thrives best in loamy soil mixed with a little peat and leaf-mould. It forms creeping root stocks or runners and may be propagated from these in the spring. It is a native of southern Pennsylvania and farther south in the U.S.A.

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Miltonia.—These plants are subject to attacks of thrip insects, which soon disfigure the leaves and cause great injury to the plants. It is essential to make periodical examinations for the pests. If the young leaves adhere to each other they may be separated by means of the thin part of the handle of a budding knife. A brown looking outer sheath often appears at the base of the young growths which clasps it so firmly that the roots push upwards inside it instead of growing down into the compost. This should be carefully removed by slitting it in several places, when it may be pulled away in pieces without causing injury to the shoot.

Phaius.—Phaius Cooksonii, P. Norman, P. Marthae and P. amabilis are beautiful hybrids and very floriferous; they require far less pot room than P. grandifolius, and varieties of P. assamicus. Phaio-Calanthe Sanderiana, P.-c. Berryana, P.-c. Arnoldiana and P.-c. Colmanæ should be afforded similar treatment to the above. These Orchids are very subject to attacks of thrips and scale insects, which should be kept in check by sponging the leaves frequently with a weak solution of nicotine insecticide. They should be grown in an intermediate temperature and afforded plenty of fresh air at all times, but they must not be exposed to cold draughts.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Propagation.—The time has arrived for the propagation of most of the summer bedding plants and during the next few weeks much of the foundation of next year's floral display will be laid. Where large stocks of plants are required the beds should be inspected periodically, and healthy, ripened growths selected as cuttings without spoiling the effect. Cuttings of Pelargoniums may be rooted in boxes filled with a compost of sweet loam two parts, and flaky leaf-mould one part, adding a good sprinkling of sand. Make the soil moderately firm and insert the cuttings about two inches apart, taking care that they are made thoroughly firm in the soil. Water the pots or boxes thoroughly on completing the work and stand the receptacles on trellises or beds of ashes in an open position. Sprinkle the cuttings with clear water every evening during dry weather until roots develop. Cuttings of Heliotrope, Verbena, Salvia, etc., may be rooted in a close frame and the stocks carried through the winter in a cool house. The cuttings should be made of young wood about two inches long and they are best struck in pots, using a light, sandy compost. If the frame is kept moist and shaded they will root freely.

Annuals.—The practice of sowing annuals in late summer for spring display has much to recommend it. It is important to sow the seeds early enough for the plants to become strong and able to perform what is required of them, yet not too early, or the plants make too much growth and suffer from bad weather in the winter. From the middle to the end of August is a suitable time to sow annuals in the southern counties, but much depends on the nature of the soil and the district. It is preferable to sow in drills on clean and well-prepared, but not too rich, ground. The after management consists in simply keeping the plants clean and preventing overcrowding, as weak, drawn plants stand but little chance of surviving the winter. Amongst those annuals which are best adapted for this purpose are:—Sweet Alyssum, Calendrinia, Calendula, Candytuft, Chrysanthemum, Collinsia, Coreopsis, Erysimum, Gilia, Shirley Poppies, Leptosiphon, Linaria, Nemophila, Phacelia, Saponaria, Viscaria, Virginian Stock and Whitlavia.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Early Apples.—Dessert varieties of Apples, such as Mr. Gladstone, Irish Peach, Beauty of Bath and Lady Sudeley, will soon be ripe, and should be gathered and eaten direct from the tree, as they lose flavour and become woolly if left for any considerable length of time. Where birds are troublesome to ripe fruit nets should be hung over the trees for the time being. Flies and wasps also attack ripe fruits at this season and bottles of sweetened beer hung near the trees will prove a counter attraction to them, and save many fruits from being spoilt. Wasps nests should be sought for and destroyed. A wad of cotton wool soaked in a solution of cyanide of potassium made with warm water should be pushed well into the hole, and some ot the liquid should be poured in the hole. This will destroy every wasp in the nest and also those coming in at night. Cyanide of potassium is a deadly poison, and should be kept under lock and key, and only used by a responsible person.

Morello Cherries.—These will now be ready for gathering; if required for bottling they should not be allowed to become too ripe for they may be handled better and keep longer if used just when approaching ripeness. I have never seen these Cherry trees so full of bloom, yet they failed to set a large crop, although the weather was fairly favourable at the time of flowering.

Nets.—All nets that have been used on bush and other fruits should be dried thoroughly, folded and stored in a dry place. It is a good plan to attach a label to each net giving the size of the particular net.

Hedges.—All hedges serving as boundaries to orchards and fruit plantations should be cut and trimmed by now in order to allow the maximum amount of air and light to reach the fruit trees, as on the proper ripening of the wood depends much of the success of next season.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Vine Leaf Spot.—Vine leaf spot is caused by Cercospora viticola, a parasitic fungus, which attacks vines during their growing season. The disease, if present, will be noticeable by this date. Although little can be done to combat it at this season of the year, plans should be made to treat it during the vines' dormant season. This disease chiefly attacks Muscat varieties and is rarely seen on other varieties of Grapes. It is first noticeable by the appearance of yellow blotches in the leaves, which, as a rule, commence at the edge of the leaf, gradually extending until the whole leaf becomes yellow, and in a very short time dried up as if it had been scalded. It will be advisable to collect and burn every leaf that falls, and also to burn any wood that is taken out when cutting the bunches; this precaution will also be necessary when the vines are pruned. It is sometimes thought that the disease only occurs when the drainage is unsatisfactory, but I have seen Muscat vines to be attacked by this fungus when they have been planted only one year and the drainage in perfect order. Vines that have been attacked by this pest should be well cleansed during their resting period, dressed thoroughly with a mixture of lime and sulphur, and sprayed with the same mixture in their early stages of growth. Let there be a free circulation of air in the vinery whenever the outside conditions will permit of ventilating.

Figs.—Trees that are developing their second crop of fruits should not only be supplied liberally with water but also assisted by frequent applications of liquid manure or a concentrated soluble fertiliser. Even trees that are ripening their crop should never be allowed to become dry at their roots, but at the same time the atmosphere should be kept drier than in houses with trees in an earlier stage of development. When watering is necessary at the time the fruits are ripening it should be applied on a fine morning when the ventilators may be opened freely. No stimulants of any kind should be applied until the ripe fruits are taken from these trees.

Cucumbers.—Plants from which fruits are being cut should be top-dressed frequently with light dressings of fresh, rich soil, in order to encourage the development of new surface roots. Keep all growths pinched at the first or second leaf according to the space available. Use only sufficient fire-heat to promote a buoyant atmosphere during the night; with this treatment there will be less risk of attacks of red spider.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Caladiums.—The plants which were started early in the year will now be putting on the sear leaf, and having regard to the necessary ripening of the corms, they should be placed in a lighter position in the houses, given less water at the roots, and eventually be exposed to full sunlight for a few weeks previous to storing the bulbs in their old pots, for the winter. Similar treatment should be afforded Achimenes and Gloxinias which have passed out of flower. The last-named plants should, however, be fed with liquid manure for some time after flowering to ensure good bulbs for next year. For the same reason seedling Gloxinias should be kept growing for so long as possible during their first year.

Freesias.—The corms should, if possible, be potted in August. A fairly rich soil suits them, comprising loam, leaf-mould, and manure with plenty of sand added. Well-drained pots are essential. Five or six good bulbs in a five-inch pot and eight or nine in a six-inch receptacle will be sufficient. When potted, they should be stood on an ash bed in a cold frame, and watered lightly; this watering should suffice until the young growths have pushed through the soil.

Chrysanthemums.—These plants require a good deal of attention at this season in the matter of staking and tying and in making the plants secure against damage from high winds. Where Chrysanthemums are being grown for the production of large blooms they will now need almost daily attention on the part of the grower in the matter of bud-taking. This operation is most safely performed in the early morning or evening. The successful "timing" of the blooms can only be accomplished, however, when the grower has made careful observations of the characteristics of the different varieties and by good judgment has adopted a method of periodical stopping of the plants throughout the growing season.

Pelargoniums.—Plants of the show or fancy types of Pelargoniums which have been placed outside to mature, should now be cut back hard, and the pots laid on their sides until new growth has started. Until this has taken place all the moisture necessary for the plants may be supplied by means of the syringe. Cuttings procured from the tops of the matured growths should be inserted singly in small pots to provide young flowering stock for next year. Zonal Pelargoniums which are being grown in pots outside for winter flowering should be kept supplied with liquid manure and soot-water. Pinch out the flower buds as fast as they appear until a month before the time when the flowers will be required.

Shrubs for Forcing.—Lilacs, Deutzias and other handy flowering shrubs which are being grown for forcing purposes and are now plunged in their pots outside, will be greatly benefited if given liberal applications of liquid manure. Remove all suckers from the Lilacs.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Mushrooms.—Material for making fresh Mushroom beds should be collected. Fresh horse droppings should be placed in an open shed until sufficient has been collected for the purpose and the heap should be turned on frequent occasions. When fermentation has caused the litter to turn a brown colour and it is not too moist it may be made into a bed. Make the manure firm by beating or treading it. Plunge the thermometer well into the centre and when the temperature has fallen to 90° to 95° insert the spawn. After this is done cover the bed with two or three inches of good loamy soil that has been passed through a half-inch sieve. Keep the walls, bed and floors moist. About three weeks after spawning place a layer of short hay all over the bed.

Early Cabbages.—A further sowing of Cabbage seeds should be made to meet the demand for planting. If sown too late the seedlings will not be ready for autumn planting.

Early-sown Carrots.—This crop may now be lifted otherwise many of the roots will crack through so much moisture in the soil. The roots should be trimmed and placed in sand in a cool, shaded corner.

Late Crops.—The hoe should be used freely between the plants, and if they are not making quick growth dust sulphate of ammonia along the rows and hoe it in the soil. Once cold weather sets in the development of the plants will almost cease.

INDOOR PLANTS.

BEGONIA LLOYDII.

At the Chelsea Show this year Messrs. Sutton and Sons exhibited specimens of Begonia Lloydii in which the colours of the flowers appeared to me to be somewhat lacking in brilliance, but possibly this may have been due to the effect of light passing through canvas. My chief reason for writing is to point out that Begonia Lloydii resents shade and to plead for it that where cultivated in the cool greenhouse or used as a bedding plant, it should always be grown in full sunlight. Indeed, from the time the seedlings emerge the plants should be grown in a light, cool greenhouse with plenty of ventilation day and night and no shade of any kind. I enclose a photograph (Fig. 37) to show that Begonia Lloydii is an ideal pot plant. The specimens illustrated are in 6-inch pots; they are fifteen inches high and carry an abundance of flowers.

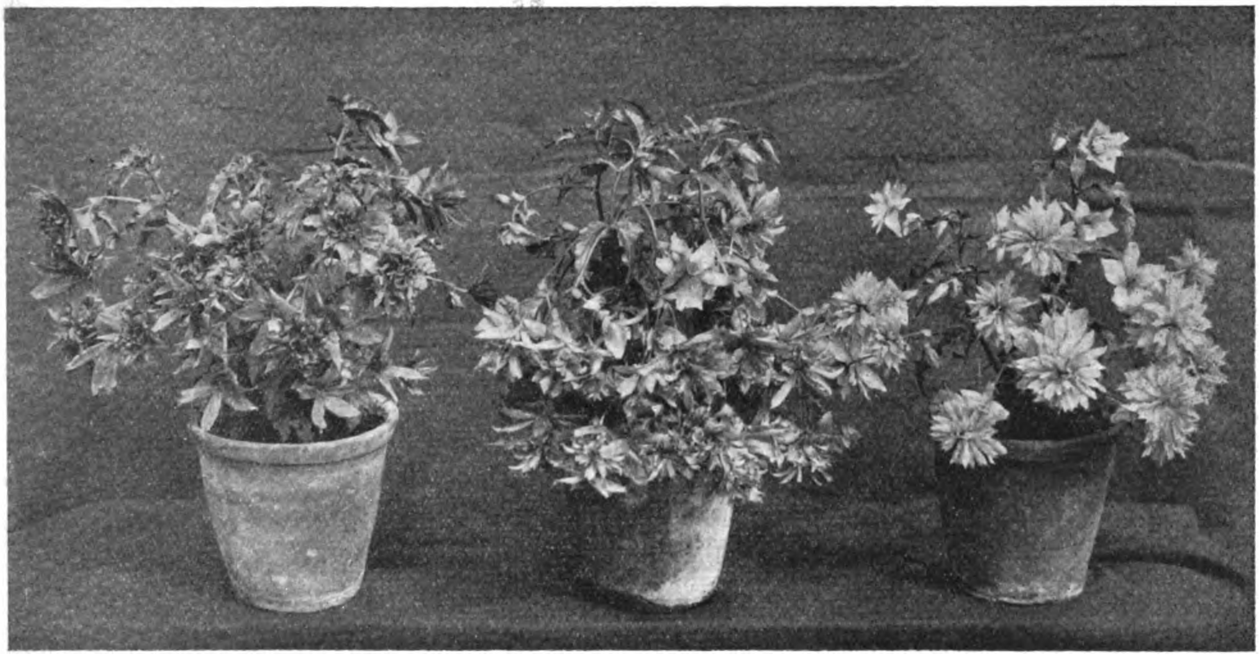


FIG. 37.—VARIETIES OF BEGONIA LLOYDII.

This Begonia is also excellent for summer bedding and when planted out carries quantities of flowers, provided the roots are never allowed to become dry.

The central specimen in the illustration represents an early type of B. Lloydii, while the other two represent the newest forms raised at Coombe House Gardens, Croydon. The plant on the left bears Anemone-centred flowers, while the one on the right has the stamens developed into narrow petaloid processes which are densely crowded together, thus giving the bloom a very regular and densely double form. I have been fortunate in being able to raise some very interesting varieties of this hybrid Begonia, some of which, as already indicated, show variation in the form of the flower, while in others the colours now evolved are particularly fine. *Mark Mills, Coombe House Gardens, Croydon.*

MARANTAS.

The cultivated species of Marantas have very ornamental leaves and they are invaluable for the decoration of the stove or warm conservatory. The arrow-root of commerce is extracted from the tubers of several species. Several plants that were formerly included under Maranta are now removed to Calathea, to which it is allied. They are stove, herbaceous perennials and are increased by divisions of the crowns and under proper treatment will form plants quickly. Large plants are best for cutting up as they have strong crowns for the purpose.

A collection of these beautiful foliage plants is always an attraction. In the winter the plants may be allowed to become moderately dry at the roots before potting them in fresh soil in the spring. If the plants are strong and healthy they are best repotted in fairly deep, well-drained pans. They thrive in good turfy loam in a rough condition, mixed with fibrous peat, fresh Sphagnum moss chopped up roughly, a little charcoal, decayed cow manure and silver sand. The potting should be done moderately firmly by pressing the soil round them with the fingers; the crowns should be raised a little in the centre to give the young growth perfect freedom to develop the foliage freely. Care must be taken not to overwater the plants before they have started into growth freely, but when established in good condition the Maranta needs plenty of moisture at the roots. The surplus water should pass freely through the compost to prevent it becoming sour and stagnant.

Marantas should be shaded from bright sun, otherwise the leaves will lose much of their beauty and brightness of colour. When well rooted and growing freely the plants may be watered once a week with liquid manure made from sheep's dung, or cow's manure with a little soot added. This stimulant is very beneficial to the plants if given in moderation when growth is developing freely; it promotes a bright, glossy colour on the foliage. Another good liquid stimulant may be made from guano; it is always safe to use.

After the stimulant is applied young roots soon make their appearance and the plants begin to have a healthier appearance. Take a five-gallon water pot, fill it with water, then place a small 60-sized potful of Peruvian guano into a piece of tiffany or gauze and strain it through the tiffany or gauze until nothing but the grit remains. Stir the liquid well and it may be used at once. Syringe under the leaves lightly when the weather is favourable two or three times a day to

D

prevent insect pests infecting the plants. Should pests be detected destroy them with XL All composition or some other insecticide. Weak soot water lightly sprayed on the leaves is also a good preventive of insect pests. Mealy bug is the greatest plant pest growers have to contend with in warm, moist houses, and they will attack Calanthes. Red spider is another pest which often attacks plants cultivated under glass; it is so small as to be scarcely visible to the naked eye, yet when a plant is infested with it it soon becomes unhealthy. Some plants are very much subject to red spider, especially if the house is kept hot and dry, for the pest revels in a dry atmosphere. Syringe the foliage underneath as advised for mealy bug; also sprinkle plenty of moisture about the house, for red spider will not thrive in a moist atmosphere.

The following are some of the best and most distinct of the Marantas:—M. major, a fine species of elegant growth and one of the most useful plants for decorative purposes. The plant has a constitution almost equal to that of the Aspidistra, enduring for a long time without injury, the dry atmosphere and changing temperature of the dwelling house. The plant grows two feet to three feet high, and has leaves four inches to nine inches long of different shades of green. It is one of the best plants for the decoration of halls, drawing-rooms, corridor, etc. M. Veitchii has rich, glossy green foliage marked on either side of the midrib with blotches of yellowish-green and purplish on the under surface. M. insignis is a robust species with a hardy constitution, producing leaves fifteen inches long and two inches wide; the foliage is green with olive-green margins and blotches and with purple on the under surface. In M. Makoyana the leaves are pale green at the margins, and deep green blotched with white reticulations in the centre. M. hieroglyphica has dark, velvety-green leaves with irregular streaks of silvery white. M. Massangeana has foliage with olive-green margin and greyish-green in the centre; it is a distinct and beautiful species. M. illustris, with leaves of bright Pea-green colour streaked with deeper green and blotched with white is another fine species, whilst M. splendida has leaves ten inches to eighteen inches long of dark olive-green colour with blotches of yellowish green.

There are many others worthy of a place in collections. Marantas are of easy culture if grown in moderate heat with plenty of atmospheric moisture. *John Heal, V.M.H.*

BULB GARDEN.

SCARLET, CRIMSON AND RED TULIPS.

In continuation of the remarks previously made on Tulips (see pp. 6 and 47), I propose on this occasion to deal with scarlet, crimson and red varieties. It must of course, be recognised that grouping the flowers under their colour headings is purely arbitrary, but for my guidance I am using the *Report of the Tulip Nomenclature Committee*, issued by the Royal Horticultural Society—a publication which should be in the hands of all Tulip enthusiasts.

To begin with the single, early-flowering section, I would place Couleur Cardinal at the top of the list. It does not flower out-of-doors so early as many belonging to this section and may be regarded as a "late-flowering early" coming into bloom about the same time as the yellow Prince de Ligny and White Swan. It is large, brilliant crimson-scarlet, with a purplish sheen on the outside of the unusually substantial segments. The stem reaches a height of about sixteen inches and is sturdy. It deserves a place in every Tulip collection. Those who would force it must not "race" it and it is best reserved for the second batch. Couleur Cardinal suffers from one great fault when grown under glass, in that the points of the segments do not finish well and they remain "green tipped"—a condition which detracts from the beauty of the flower. Commercial growers have lost much money at times when their flowers have suffered from "green tip" and it is hard to explain why some flowers in the same box or pot come perfect and others possess this constitutional disfigurement. When forced gently the trouble is lessened considerably. Out-of-doors "green tip" is extremely rare.

Of much more intense colouring is Vermillon Brilliant, and there is no variety of this section to equal it for forcing or bedding. It is easy to force and is one of the earliest to flower out-of-doors. Closely allied to this variety, both in colour and height, is Brilliant Star. Some claim it to be even better than Vermillon Brilliant, and while it certainly may be obtained a day or two earlier under glass, the two varieties are not required for garden decoration. Waterloo (syn. Belle Alliance) is of good scarlet colour, and Artus and Cramoisi Brilliant are also worthy of inclusion in the list of bedding varieties.

Of red and dark scarlet shades I give pride of place to Sir Thomas Lipton which possesses a large, cup-shaped bloom of great substance; it is a good forcer and fine for bedding. Maes follows it closely and has a rich, deep scarlet bloom, tinged with purple on the inside of the segments. Grace Darling is another beauty of bronze-scarlet colour. I have tried a few indoors but it loses its colour and does not come so bright as out-of-doors.

Roi Cramoisi or Crimson King is rather unique in this section owing to its reflexed petals, and it is superb for bedding because of its dazzling colour. Dusart is more of a carmine-scarlet and I have always found it to withstand bad weather well. For gardens situated near industrial towns it despises the smoke-laden atmosphere better than any other red or scarlet variety I know, and on that score alone it deserves special mention. McKinley might well be considered under this class and it makes a very striking bed. It forces easily but in colour it is orange-red on the inside and bright cerise scarlet on the outside.

There are not many scarlet or red, double, early varieties. Vuurbaak is, in my opinion, the best bedding variety, and when fully opened it develops a tinge of orange in the intensely brilliant-scarlet colour. The stem is strong and the growth of sturdy habit. It forces well, but must not be hurried or "green tip" will occur. Imperator Rubrorum, although one of the oldest of the double-scarlet varieties, is one of, if not the best, for forcing. La Matador is also an admirable flower and very effective in beds or for forcing. The colour is a glowing scarlet with a purplish bloom on the outside of the perfectly egg-shaped blooms. Willem III is also recommended for beds and Rubra maxima, a darker shade than any of the above, concludes my selection.

Cottage Tulips are particularly weak in good scarlet and red varieties. The old Gesneriana Spathulata is not to be despised for garden decoration; it is not a commercial flower, as it does not travel well, but I have seen it effectively employed in broad garden scenes. The flowers are very large and of rich crimson-scarlet colour. I have never been able to succeed with it under glass. Mention of this old variety recalls Gesneriana Advance, a variety which I saw in Holland two years ago. Gesneriana Spathulata was one of the parents and the large fiery Tulipa Turbergeniana, the other. The result is a flower of huge dimensions; one record gives the petals as 8½ inches in length and 4½ inches in breadth! The colour is rich orange-scarlet. The price is only for the connoisseur. Much depends upon its freedom of "splitting" as to whether in a dozen years to come it will be within the range of a modest purse. Then there is Grenadier, a rich orange-scarlet with substantial flowers—a variety which received an Award of Merit from the Royal Horticultural Society in 1911, when it was shown in admirable form by Messrs. W. T. Ware, Ltd. Caledonia is useful for late flowering; it does not grow very tall and often, in fact oftener than not it comes twin-flowered

Elegans, Macrospeila and Fulgens are three red kinds, the foremost having long, reflexing segments of deep red colour. It is particularly useful for indoor decoration and flowers of it judiciously mixed with the yellow Miss Willmott or Mrs. Moon never fail to please. Macrospeila comes into flower when most Tulips are on the wane; it is of medium size, wine-red, and is useful for table decoration. It is, however, difficult to obtain a true stock of it and in all the purchases I have made it generally turns out fifty per cent. true and fifty per cent. Gesneriana rosea or some such variety. Fulgens is a clear crimson with long flowers and reflexing petals. Scarlet Emperor is of a particular vivid shade of scarlet and is an enormous flower, and there is, of course, Inglescombe Scarlet, bright vermilion-red, with flowers held on graceful stems, which makes it so useful for filling vases.

The Darwins are the largest class but, unfortunately, I cannot grow the highly coloured sorts well. Each year, owing to the fact that they break so rapidly on my hot soil, I have to bring in fresh stocks and because of this I cut my red and scarlet Darwins down to a minimum. I am sure that "breaking" has something to do with hot, dry soils. Farncombe Sanders, which is undoubtedly the finest scarlet Darwin in cultivation, comes ninety per cent. broken after the first year with me. Bartigon is equally bad, yet the stocks I obtain mine from are practically free from the trouble on a Lincolnshire grower's bulb farm. The soil there is cool and moist. Broken flowers are rarer still in Holland—again where the soil is kept cool because of its high water content. However, I would give Farncombe Sanders leading place. The other variety, Bartigon, is fiery-carmine and both are good when forced. Bartigon has a fault in that sometimes the segments are not always produced at the same level from the stem and the flower thus becomes a monstrosity. A Dutch grower told me that to overcome this trouble the largest bulbs should not be forced. Why, I do not know, but it is nevertheless true. Medium-sized bulbs give perfectly normal flowers. Professor Rauwenhof is very like Farncombe Sanders, growing as tall and giving large flowers. It also forces very early and keeps its colour under glass. Feu Brilliant is of bright scarlet colour, a fine flower for bedding, and City of Haarlem has a vermilion-scarlet bloom of perfect shape. Europe should also be included in the list, for it is a strong grower of rich, salmon-scarlet, and Glow has a bright vermilion flower. Is Glow synonymous with Claude Gillot? Many lists give them as one and the same; the R.H.S. list treats them as distinct, and in the description of Claude Gillot it is stated: "This variety is similar to 'Glow' with which it is often confused. It has, however, a more violet colour." I have heard it explained by one grower, who regards them as the same thing, that Claude Gillot (French pronunciation) after a period of years has become euphemistically abbreviated into Glow!

Homer, Isis, and Ouida form another trio, all of high merit, the last named being deserving of greater popularity than it appears to have, for the flowers last a long time, and the bright crimson-scarlet colour never fades.

Darker varieties of red and reddish-crimson shades include William Pitt, a flower which is of great beauty and is evidently scarcer than it was, for the price has soared within the last year or two; Harry Veitch, blood red and exceptionally striking in full sunlight: King George V, comparatively new and of a pleasing bright red colour and excellent in a bowl of fibre; Petrius Hondius, rose-carmine, a treasure for bedding; King Harold, similar to Harry Veitch; and Whistler, maroon-crimson and extra large in size. If Pride of Haarlem is permissible in this list then Prince of the Netherlands must also find a place, for they are both classified under "cerise" in the publication already cited. Pride of Haarlem I think would be better considered under "rose and rose shades," being an admixture of rose and purple: Prince of the Netherlands is, on the other hand, a bright cerise-scarlet slightly flushed with salmon and is a very fine thing, growing vigorously and exceptionally tall.

There are a number of other varieties which perhaps ought to be included, but I feel that I am becoming "colour bound." New Tulip varieties do not make their appearance so rapidly as new sorts of Narcissus, but I do not think this is due to lack of interest either by the grower or the buying public. There is, in my opinion, a need for a good classification, not so much from a point of view of synonymy, but rather from the standpoint of "a too much alike" basis. To do this permanent and extensive trials are required. Whether it is worthy of the expense attached thereto must, of course, be a deciding factor. *R. K.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

THE Natural Order Compositae has evolved a far greater number of genera and species than any other, and affords a signal example of the advantage of co-operation. The flowers, instead of being produced singly, as in the Daffodil, in a spike as in the Mullein, in a raceme as in the Laburnum, or in an umbel as in the Hemlock, crowd together in a compact head so as to offer the utmost attraction to flying insects which ensure fertilisation. If the arrangement stopped there, it might be claimed as evidence of the virtue of pure socialism, all the flowers performing their function on equal terms and under identical conditions. But it does not stop there. In the majority of Composite plants the outer florets of the head become rays, sacrificing their sex, and often assuming distinctive colour, for the sole purpose of attracting insects to the operative florets of the disk.

This reflection is the result of a morning spent in up-rooting Asters of the Michaelmas Daisy type from a border where they threatened to overwhelm everything else, and would have done so before long if let alone. The fact is that it is better to do without Michaelmas Daisies altogether than to admit them to the company of other and less voracious herbs. Let them have a border to themselves and fight it out with each other. Not only do they enjoy the advantage common to nearly all Composites of sending abroad clouds of winged seeds, but they send out runners as vigorously as the Bishopweed, and end by turning fertile ground into a dust heap. Personally, I would be content to dismiss the whole genus exept A. Thomsonii, A. Lipskii, and a good form of A. alpinus. In the kindred genus Erigeron, the variety of E. speciosus named superbus deserves special mention as a superb flower. Not only are the blossoms larger and brighter, but it carries them on stiff stems and does not flop about as the type does in our humid west.

Notwithstanding that the vast majority of Composites are not worth cultivating, and that the Order contains some of our most persistent weeds, such as Groundsel, Ragwort, Dandelion, etc., the fact remains that our borders would be sadly impoverished if all Composites were banned. Leaving aside such florists' flowers as Dahlia, Zinnia, and Chrysanthemum, it is easy to call to mind many species of cardinal merit. Within a few yards of where I am sitting is a strong plant of the Himalayan Inula Royleana carrying a dozen great flat, orange disks, five inches across, on two feet stems of a quality that require no staking. It is far the finest of the genus, and deserves to be more commonly seen. A little further on is another Composite, in marked contrast to the great Inula. Crepis incana—only six inches high—I know not whence it was imported, but I pounced upon it in that treasure-house of good things, Messrs. Cunningham and Fraser's nursery at Comely Bank, Edinburgh. It bears pretty, bright pink flowers, well set off by the silvery-grey leafage. A suitable neighbour for this dwarf is a Milfoil named, absurdly enough, Achillea King Edward, bearing flat corymbs of sulphur-coloured flowers.

New Zealand has furnished us with some very attractive members of the despised Groundsel family, which are quite free from the gross character of those which have come here of late years from China. Probably Senecio Huntii, which grows into a small tree twenty feet high and is now, in early August, covered with panicles of good yellow flowers, is fitted only for maritime districts; but S. Greyii and S. laxifolius are fairly hardy and well worth a place. The South American S. pulcher really demands more sunshine, or sunshine of more ardent quality, than we can provide in western Scotland; nevertheless, a warm summer stimulates it to flaunt its startling arrangement of magenta rays round an orange disk, which one might pronounce a fearsome combination, but which proves very pleasing in the autumnal gloom. *Herbert Maxwell, Monreith.*

HORTICULTURE AT THE BRITISH EMPIRE EXHIBITION.

ORCHIDS.

A LARGE heart and a long vision are necessary ere anyone undertakes to make a continuous display of Orchids at a great exhibition. If memory serves aright, Messrs. Charlesworth and Co. are not the first to exhibit Orchids throughout a big London show, but be that as it may, they are the only firm exhibiting Orchids at Wembley. Their Orchids are in a very pleasing structure near the old London Bridge on the Horticultural Section side. This was constructed for them by Mr. Harris of Ealing and it is in four sections; an entrance lobby, with comfortable seats and specimens of Phoenix Roebelinii and with other doors which can be closed during cold weather; the next division is the chief one and contains the bulk of the display; the third section is devoted to small plants, and the fourth is a neat little office.

From the point of view of floral display August is not the best time of year to inspect Orchids, nevertheless such has been the progress made by hybridists—among whom Messrs. Charlesworth and Co. occupy a foremost position—that there is now no "closed season" for Orchids, as was the case a comparatively few years ago. Earlier in the season the Haywards Heath firm had a more imposing display at Wembley, and a little later they will again make a brave show. Nevertheless in August they had a very charming and attractive exhibit with plenty of Maidenhair Ferns to hide the pots of the flowering plants. Odontiodas were prominently in flower at the end of the Bank Holiday week, and among these none was more brilliant and effective than O. Chantecler, which is one of the best of the richly coloured section. O. Brackenhurst with fine red flowers is the result of crossing Oda. Charlesworthii and Odm. eximium. The variable O. Brewii was represented by several plants, in most of which the flowers showed the deep, bronzy-brown colouring which is probably the most characteristic hue. O. ardens is another pretty form, while O. Columbia made a fine show.

Odontoglossum crispum xanthotes seems always in bloom when a fair number of plants are grown, and it is a lovely flower with its yellow markings on a pure white ground. It was represented in this display, as also was the old, long-spiked species. O. hastilabium, once a great favourite, but now, alas, seldom grown since hybrids are more popular. O. crispum was represented by prettily spotted forms, and there were such useful hybrids as O. Tityus, O. plumptonense, with delicate mauve markings on a white ground; and O. Cyrus, the result of crossing eximium with Rolfae.

A belated Miltonia maxillaria was on view in company with the brightly coloured, yellow-centred, highly bred M. H. T. Pitt, and the gay M. Beau Brummell. Miltonia Isabel Sander represented another section, while the best of the Odontonias were O. Dora with light golden centre and O. Edna, the latter one of the graceful results of using O. Warcewiczii as a parent.

More complex hybrids were represented by Wilsonara majalis, soft brown and yellow, and Oncidioda Charlesworthii. Here too were to be seen the small-flowered, long-branched Oncidium incur-nephorum, the result of crossing the small-flowered Oncidium incurvum with the large-flowered O. cornyeiphorum. The several plants of this graceful hybrid were placed near the top of the stage, and their dainty blooms lent a pleasing charm to the whole display.

Cattleyas were few in number, but C. Tityus was well shown and its pretty purple flowers were very attractive, while C. Keinastiana, with three white and mauve-purple flowers was equally charming.

In the second division Messrs. Charlesworth and Co. showed little groups of Odontoglossums, two, three, and four years old respectively, from seed sowing; Odontoglossums three, four, and five years old respectively, and some healthy little youngsters of the Odontonia group. All these were supposed to be unflowered seedlings, and labelled as such, but they appeared to resent this marked allusion to their juvenility and signified the same in many cases by producing a one-flowered spike just to show what they could do. On the centre stage of this division were splendid plants of Odontiodas, Odontoglossums, and Odontonias in 48-sized pots, all in the very best of health and vigour and appearing to have no objection whatever to the atmospheric conditions which they obtain at Wembley.

On the screen which divides the plants from the last-named section Messrs. Charlesworth and Co. displayed a fine series of enlargements of micro-photographs of the fungi used in their highly scientific methods of raising Orchids from seeds, whilst other photographs showed the process of germination and also the "cultures" such as the especially favoured visitor may see when he pays a visit to Messrs. Charlesworth and Co's establishment at Haywards Heath. Needless to say, the Orchid House at Wembley is built to indicate a good type of structure for the cultivation of Orchids; everything is spotlessly clean and an expert is in attendance to offer advice and effect sales; and at the far end are samples of the materials used for potting Orchids and a series of pots and pans commencing with the thimble-like midgets used for Orchid seedlings.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

A COLOMBO GARDEN.

COLOMBO is a garden city *par excellence.* So much so, indeed, that if one looks down on the city from the top of St. Joseph's tower one sees no sign of houses in the residential quarter—only a sea of waving Palms, broken here and there by the sparkling waters of the lakes and the splashes of vivid red gold of the Flamboyants. Yet with all its natural beauty and unsurpassed possibilities, there was not one real garden in Colombo up to 1919; nothing more than attempts at garden-making in the shape of unsatisfactory small formal gardens, remnants of the Dutch influence, and few at that; or lawns—which, by the way, with the help of a little care and watering may be kept green the whole year round—dotted haphazardly with Coconut Palms, with a few flowering trees and shrubs growing to the walls of the bungalows in compounds varying in extent from half an acre to four acres.

I was approached, early in January, 1920, with the view to laying out a private garden. The site consisted of four acres of Coconut grove on absolutely flat ground and badly drained, sandy soil. I was shown the plans of the house and the spot on which it was to be built and given *carte blanche.* If permitted any choice as to position of the house I would have put it, for the sake of perspective and general effect, some fifty yards farther back, instead of in the centre of the grounds. Nevertheless, the surroundings were satisfactory, the land being surrounded on the South by a fashionable avenue lined with full-grown Flamboyants and Pterocarpus indicus alternately; on the East and West by well-wooded compounds and on the North by a minor road, thus giving an outlet to the back premises by an *allée de service.*

The principal difficulties to overcome were the flatness of the land, its bad drainage in a country subject to tropical downpours and their flooding consequences, the thinning of the Palms and the temporary retaining of clumps for effect until the newly planted trees had had time to grow. There was no question of cultivating rare specimens of plants, but it was essential to chose fast-growing trees and shrubs and aim at the quickest effect. I decided upon leaving the back portion of the land behind the bungalow almost untouched, except for broad avenues cut through the Coconuts and a large space for a tennis court, and I concentrated my efforts on a sunk garden, eighteen inches deep, reached by three flights of shallow stone steps twelve feet wide and covering most of the two acres in front of the bungalow. After due consideration of space and land I decided to lay-out a garden in the 18th century Italian style, corresponding to the English Queen Anne period, and to blend architecture with the garden and have entrance pillars, gates, steps, intermediary pillars, and mouldings in exact keeping with the period. We started work with a labour force of twenty coolies under a Cingalese foreman and carried it out under nine months.

A low wall with heavy 18th century moulding, relieved every forty feet by low pillars, was built in a line with the street, allowing for two broad entrances at equal distances from the East and West boundaries. A wide and somewhat artistic cement drain, in which all the drainage of the garden met, was built at the foot of the wall, while a broad slope of weekly-mown grass ran from the drain to the *Chaussée.* A straight hedge of double-red Hibiscus connecting each pillar was allowed to grow six feet high and produced a continual blaze of colour. A deep shrubbery planted with Palms, variegated Pandanus, double-pink Hibiscus, Cassias, and various flowering trees and shrubs hid the bungalow from the road by the end of the second year.

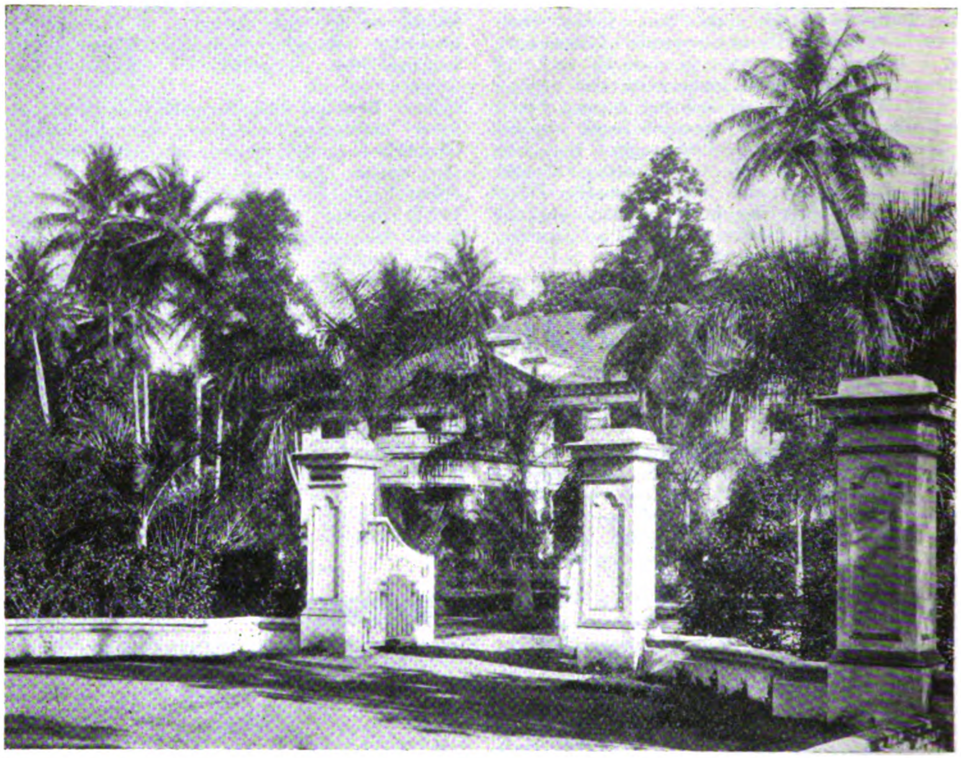


FIG. 38.—ENTRANCE GATES TO A COLOMBO GARDEN.

Two drives (in and out) eighteen feet wide start from the entrances (Fig. 38) and run for one hundred yards in a straight line; they subsequently widen out and turn at a right angle to meet under the porch in the centre of the house. The left drive ends in a formal garden planted with white Oleanders (Nerium Oleander) and mauve Salvias and facing the west facade, while the right drive runs along the east side in a straight line fifty feet from the bungalow and ends at the tennis court. The drives are lined with Royal Palms (Oreodoxa regia) and a formal growing tree that is brightened twice a year by large bottle-brush shaped flowers of white and pink, succeeded by fruits like small Apples.

A large expanse of lawn on one side of the drives runs to the boundaries, East and West, and is dotted with flowering trees and shrubs as well as tropical red and variegated foliaged plants. There are Jacarandas, with their trusses of pale mauve flowers forty feet high; Poinciana regia, forty to fifty feet high, with their magnificent display of red gold: Cassia species, fifty or more feet in height, with their May flowers of deep pink: Spathodeas, fifty feet high, quick growing, with their dark green foliage broken by large, Tulip-shaped blossoms of bright orange red; Bauhinias, smaller and somewhat unwieldy trees, with mauve or white butterfly-like blooms; vermilion and Petunia-coloured Bougainvilleas, Allamandas; Bignonia magnifica, a blaze of soft yellow and deep velvety violet; and Alocasias, with their immense leaves varying from pure white to a dark green.

The climbers I employed include the coral-like Antigonon amabile and Ipomoea Horsfalliae hanging in bright rose clusters; Philodendrons, bold and tropical; and the feathery Asparagus plumosus, which is planted at the foot of chosen trees and allowed to run up the stems and to make festoons between them. Orchids, mostly the finest species of Dendrobiums from the Burmese jungles, are firmly fixed to the branches and bark of certain trees; they flourish and spread, once established, as if in their natural surroundings.

Close to the house a line of large, rectangular flower beds, thirty feet by seven feet, has been cut into the grass and filled with rosy-leaved Coleus, bright Cockcombs, and Salvias in ten varieties. Each bed is separated by a circle of grass, in the centre of which is a six-feet high standard double-pink Hibiscus. A well-clipped hedge, five feet high, from which spring standard Crotons at stated intervals, runs all round the base of the bungalow and makes a fine setting to the verandah, which is reached by six low flights of stone steps almost covered with a purple, ground Orchid. A little farther along, around the tennis court, Petraea volubilis and Congea tomentosa is growing on pillars and allowed to mix their pastel blue and dull pink sprays, thus producing a most effective mixture of colours in a continuous and glorious garland. Here and there are groups of rare Palms, while isolated Traveller's Palm (Ravenala madagascariensis) with Musa-like leaves and their wonderful seeds in bunches of turquoise blue, relieve the monotony of the lawns.

The sunken garden, the feature of the scheme (Figs. 39 and 40), is divided in two equal parts by a broad carpet of grass thirty feet wide and 350 feet long, starting from the central porch and ending at the shrubbery in a large semi-circle. It is lined by a low hedge, three feet high, of mauve-flowering plants, broken at equal intervals by white pillars crowned with dark blue Achimenes, and by standard, pink Clianthus. The central beds, surrounded by stone mouldings, with white stone columns and lead groups, are filled with rare Caladiums of all colours, while the surrounding beds vary with the season and are most effective with dark bronze-leaved Cannas with flowers of Peach colour, orange yellow and dark red. These grow luxuriantly and reach the height of six feet or more. At the four corners the Sealing-wax Palm (Cyrtostachys Renda var.) with its vermilion stems and Fernlike foliage stands out in relief against the grass closely edged with green, golden-tipped Alternantheras, which bring out the design and prevents the wash-out of tropical downpours.

The paths are of light cream-coloured sand and the drives of the dull red so characteristic of Colombo and Ceylon roads.

The photographs reproduced in Figs 38, 39 and 40 were taken in the third year after planting, but since then the trees and Palms have grown on an average another six to ten feet. The garden is kept in order by four garden coolies at an average wage of £1 10s. to £2 a week each. This brief description is given to show what can be done in the tropics where one must concentrate on flowering trees, shrubs, tropical bulbs and foliage, and leave entirely alone most of the plants and flowers grown in the open in England. *Count de Mauny, Roehampton, Haputale, Ceylon.*

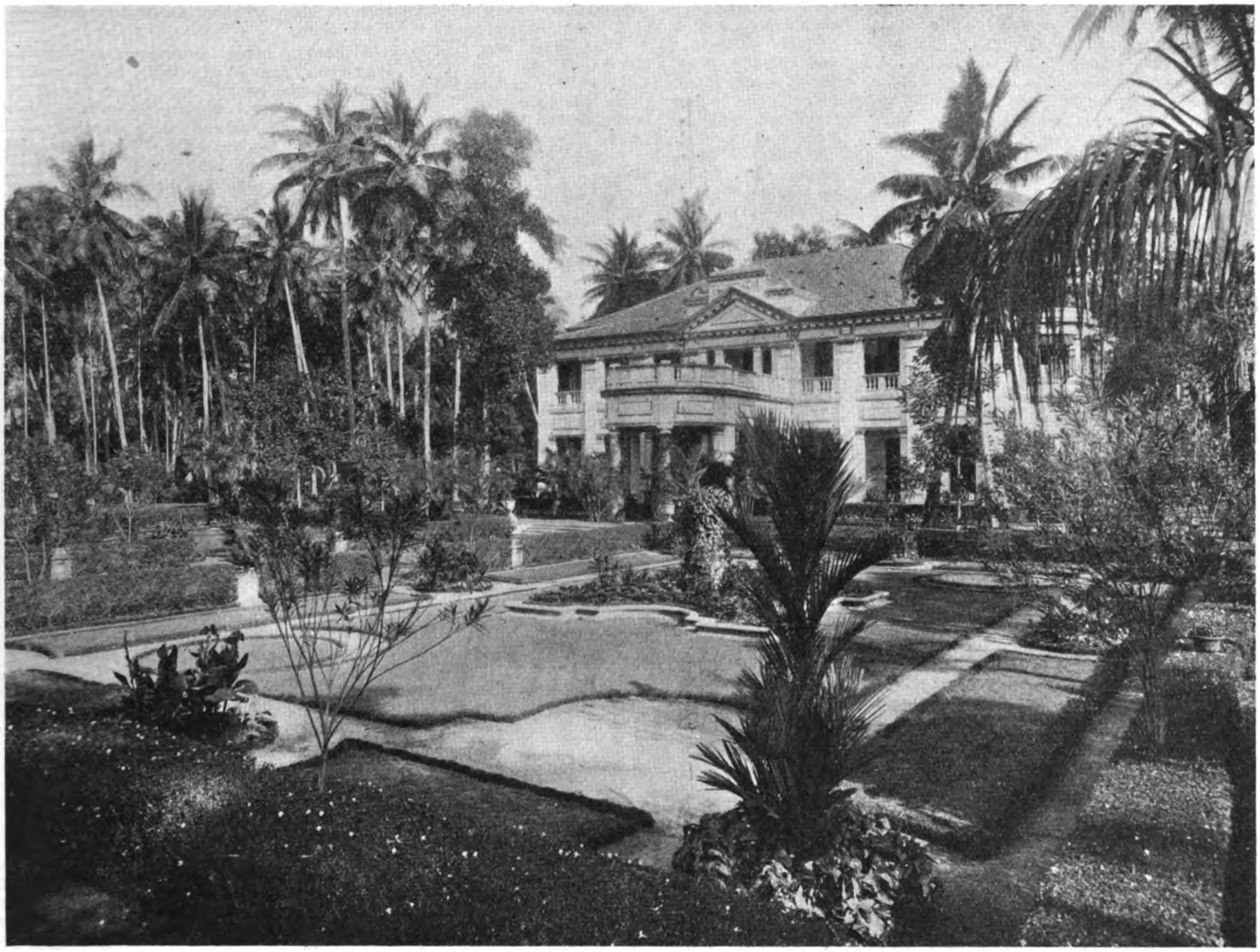


FIG. 39.—SCENE IN A COLOMBO GARDEN.

A NOVICE IN THE ALPS.

II.—GLACIER PLANTS OF THE STEIN ALP.

The descent from the top of the Susten Pass is so steep and the view of the group of glaciers which flow down from the high mountains so magnificent that the traveller can pay but scant attention to the Alpine plants. Nor is he punished for this transient infidelity, for when the foot of the mingled glaciers is reached at Stein Alp he is still over six thousand feet above the sea level. There is, moreover, a winding track which, skirting the lateral moraine of the Steingletscher, leads again upward. At intervals along the boulder-strewn path are patches of snow — miniature glaciers — the terminal moraines of which are comprised of the debris, scratched and ground into parallel lines, of dead alpine plants. But from these icy patches of sodden ground a new generation of plants is already springing up. There in vast numbers is Soldanella pusilla flowering within an inch or so of the snow, and in the still wetter places the white Pinguicula, P. alpina, with flowers like pouting Violets, is very common. The season of active life in the high alps is so brief that plants must needs be up and doing the moment they are freed from the canopy of snow.

At one of these miniature glaciers—or snow patches—is a strange sight. Small, dull red, spear-like objects project numerously from the ground, and from the lower edges of the snow closer inspection reveals their curious nature. Each is a single stamen, the stalk of which when followed downward for an inch or two—or more below ground, is seen to spring from the top of a small bulb. In some cases nothing but the single stamen is to be seen; in others there are also the rudiments of a perianth, not reaching to the surface of the ground. The plant can only be a Gagea, a genus of Liliaceae and is most likely G. Liotardi (fistulosa), a species which is apt to flower immediately after the snow has melted. A nice problem this for the plant physiologist —a flower reduced by force of environmental circumstances to a single stamen! No less curious is the fact that among the small plant debris littering the foot of this miniature glacier, laid out in longitudinal lines, are many flower spikes of Polygonum viviparum, each covered with small reddish bulbils in place of flowers. Brought down from higher altitudes by the snow the bulbils of this viviparous plant are already beginning to germinate.

In moraine-like patches of stony debris are groups of the beautiful moraine plant, Geum, "Avens." Its bright yellow flowers are larger than those of G. montanum and its foliage is of a more glaucous tint. The plant shows itself as a regular "morainer" by its long, small-leaved stolons which seek crevices between the stones. The ripe fruit of these Geums, consisting of collections of dull red, awned achenes, waving like hair, is remarkably similar to that of Anemone sulphurea, albeit on a much smaller scale. The fruits, may, however, be distinguished one from another by the fact that those of the Geums are borne on a stalk which has at intervals small, leafy bracts, whereas those of the Anemone are borne on stalks which, except for a pair of large leafy, much dissected, oppositely placed bracts, are leafless.

Away from the moraine but among the screes of rock, Anemone alpina shows up occasionally among the bushes of Alpine Rhododendrons and Whortleberry. It occurs here not in the full yellow "granite" form but in pure white (A. alpina) with bluish flush on the outer honey leaves, or pale yellow. This is curious, inasmuch as the rocks which form the great mass of this ancient moraine are granitic. It may be that in this wastage of old mountains, limestone and granite have been mingled, and that the pale form of the alpine Anemone occurs in lime patches. But this is unlikely, for Rhododendron ferrugineum is ubiquitous and therefore it would seem more probable that the books are wrong and that the two forms, sulphur and white, are not confined the one to the older and the other to limestone formation.

A delightful plant of the moraines hereabouts, and like most alpines very variable in colour, is Linaria alpina. This ought to grow on limestone, but it is plentiful enough by the Steingletscher. The violet, yellow-throated form is there and a more pleasing, deeper violet, self-coloured (concolor) form. The fleshy, glaucous leaves and the pure violet of the flower make this latter a very desirable possession and one which it should be easy to grow in the home-made moraine. Unlike many alpines the Linaria appears to be rather surface rooting. How deep some roots and rhizomes go is shown by attemping to dig out a complete plant of Anemone alpina. After removing stones and peat, and peat and stones closely packed to a depth of over a foot, the root is found to burrow at last under the base of a boulder and may not be taken whole. The lesson suggested by the observation of the native plants is that larger granite chunks than are generally used should, with peat, form the basis of the moraine. The chips we shall rely on rather for ornament than for use; a deep and fine roothold with wet, dense soil above and bottom drainage, seem to be the things to ensure it in order that our moraines shall blossom like the Swiss ones.

Azalea alpina, prostrate and spreading, with pink flowers, and dwarf Willows form, with Rhododendron and Arctostaphylos, the dominant vegetation of the mountain side. On the rock faces are many Primula viscosa—the stickiness of which seems to vary very much, and one bright plant of Primula integrifolia. It is too high for P. farinosa which, however, appears in its slender graciousness so soon as, returned from the moraine walk and facing towards Meiringen, we began to descend the valley. For a brief while the alpine features are maintained, but soon—even before the five thousand feet level is reached—the valley and mountain side are gay with all the prettiness of the plains. Echiums and field Geranium and large-flowered Campanulas and Phyteumas form the blue contingent of the flowering meads of the wayside, and with them Bladder Campion, Cow Parsley and field Chrysanthemum. The fastidiousness and loveliness of the alpines of the higher slopes is gone and the smiling landscape of the lower levels tempts—albeit vainly—those who have caught the austere spirit of the high mountain air to forego strenuousness and enjoy the Capuan content of the valleys. But the Swiss haymakers are already busy cutting off the heads of these syren plants of the valley, and released from the danger of beguilement the wanderer reaching Innertkirchen is free to turn southward and wend his way over the inhospitable Grinsel to Gletch, which lies below the Rhone glacier. There he may perchance find other alpine plants to tell friends at home about.

In the meantime he owes apology to the lower slopes of the Susten pass. They are beautiful with large forests of Spruce, high limestone cliffs and the mountain stream. One picture of natural planting deserves at all events a mention for it illustrates how niggardly we are apt to become in the space we allot to this or that plant. A rocky recess dripping with water and in it large groups of a tall Fern (Asplenium species) all over a white mist of a common Umbellifer, and rising from among it and the Ferns, noble groups af Thalictrum aquilegifolium — these made the most perfect piece of planting that I at any rate have ever seen in any garden whatsoever. *A. N.*

(*To be continued.*)

EPIPOGON EPIPOGIUM (L.)

COMB. NOV. IN BRITAIN.

This, which is the rarest British plant, was first found in Britain, as Mr. Crotch writing in the *Phytologist* (p. 118, 1855), states, by Mrs. Anderton Smith "in a footpath at the bottom of a very steep bank, close to a the Sefey [Sapey] brook, at Tedstone Delamere, near Bromyard, Herefordshire. The banks were clothed with Oaks, surrounded by Ferns and Briars and were very shady." Mr. Crotch sent the specimen to Mr. H. C. Watson to name who sent it back properly identified. Mr. Crotch observes that Mr. Lees (the well-known Worcestershire botanist) is reported to have presented a specimen to the Linnean Society. Of the specimen there appears to be no trace; rumour says it was accidentally destroyed when the room in which it was exhibited was cleared.

It was not until 1876 that we hear again of it as a British plant, when Miss Lloyd found a specimen growing on the leafy debris which had been removed by a woodman from a trench in Ringwood Chase, Salop, to the adjacent bank. She took it to Miss Lewis who painted it, and submitted the drawing to Prof. Babington, who identified it as Epipogon; the specimen itself, owing to the carelessness of a servant, was destroyed. In 1878 the species was again found in the same wood, and I believe a specimen is in Professor Babington's Herbarium at Cambridge.

For some years there was no further news, but in September, 1892, I determined to make a search for the plant. My first intention was to explore the Tedstone Delamere locality, but accidentally meeting Mr. J. Gilbert Baker at the Oxford Station I went with him part of the way and then went on to Ludlow. There Miss Lloyd very kindly accompanied me to the wood where she first found it, but a close search failed to discover any trace of it. The next day, the third of September, a renewed and arduous search was made, when at length, in quite a different part of the wood, well within the Shropshire boundary, in dense shade of Oaks on a level part of the steep, sloping wood facing northwards, a small, solitary, flowering example was found which I had the pleasure of showing to Miss Lewis, and it is now one of the chief treasures of my Herbarium.

Although many botanists, especially the lynx-eyed Mr. Wedgwood, have repeatedly searched the wood, no other example has been found, and during the war the portion of woodland where the plant grew was cleared of timber. Mr. Towndrow, A.L.S., informs me that in 1910 he heard that the plant was discovered near Ross, in Herefordshire.

This July, when in Jersey, Dr. H. Smith kindly sent me a painting, which had been made by Miss Baumgartner, from one of two small specimens which had been gathered in an Oxfordshire wood last June, which Mr. Knowles had correctly identified as Epipogon. I at once corroborated the name and hurried back in order to visit the locality. After two days search, on the first day aided by Dr. Smith, I was at length rewarded by finding a specimen in flower, but past its best, and what was possibly the dried remains of a second plant. These grew among dead leaves in shade and shelter. For obvious reasons I am not allowed to give the precise locality. I may add that the two examples discovered by the original finder withered and were not preserved, so that at present not more than four British specimens are known to exist.

Oxfordshire is rich in Orchids and is practically the only county in which Orchis Simia, Lam., occurs; it can also boast of O. militaris, L., well nigh extinct in most of its recorded localities; Orchis hircina, Cr., Ophrys Trollii, Cephalanthera longifolia Helleborine purpurata (Sm.) Druce, H. leptochila (Godfr.) Druce, and to these is to be added Epipogon. It may be added that the plate in *English Botany* is drawn from a foreign example.

The plant was figured in the *Botanical Magazine*, t. 4821, 1854, from a drawing supplied by Mrs. Anderton Smith. This was copied in the *Flora of Herefordshire*, p. 300 (1889). Two errors which have been published need correcting, *i.e.*, Clarke, in the *First Records of British Flowering Plants*, gives the date of its discovery as 1842—it should be 1854 as stated above. Babington in his *Manual* states it was only once found at Tedstone Delamere—as a matter of fact it was found there twice, the second occasion being on August 23, 1854, when the Rev. W. Anderton Smith found a mass of it near the original locality, and as it was in danger of being destroyed by timber-carting he removed it to his garden where we may assume it speedily died. No reference can be found in the Linnean Society's *Proceedings*. I may add that Gmelin (*Fl. Sibir.* i, 22, t. 2, f. 2) when he founded the genus says he so named it from the anomalous position of the labellum *quia barba* (labellum) *hujus flores ordine disposita est* In this case the ovary is not twisted so that the labellum is uppermost; in the other British genera the ovary is twisted so as to bring the labellum to the lower part of the flower. *G. Claridge Druce, D.Sc.,* ***Oxford.***

THE ROSE GARDEN.

THE ROSE SEASON IN SOUTHERN SCOTLAND.

Rose culture in Scotand has, during the present season, experienced very considerable difficulties owing chiefly to a prevailing lack of sunlight, and the prevalence of unusually heavy rains and destructive winds. In many respects atmospheric conditions are a lamentable continuance of those which prevailed during the whole season last year. Yet, with all those limitations, the Rose has, in many instances, been almost as fascinating in our gardens as in previous, and much more favourable seasons.

There are certain varieties, especially those of a snowy-white, or deep crimson colour, such for example as George Dickson or Frau Karl Druschki, that are intensely susceptible to the influence of atmospheric conditions, by which their satiny texture is materially affected, and there are others, notably Margaret Dickson (still one of the loveliest Roses in cultivation) that seem to retain their beauty and formation heroically amid floods of rain. I have never seen Margaret Dickson more beautiful at any time than she has been against a sheltered wall, looking north-west, in the Rev. J. Louden MacFadden's garden at Kirkmaiden Manse (my own birth-place) this year. Leslie Pidgeon, one of the loveliest creations of Mr. Hugh Dickson of Belmont, near Belfast, is another delightful Rose that, like the Irish rosarian's own fragrant, bright crimson namesake, is at home in that venerable and picturesque garden, which has one of the most romantic situations discoverable in southern Scotland.

At Logan Gardens in this peninsular parish of Kirkmaiden, some of the noblest of the Newtownards Roses, particularly Red Letter Day, the incomparable George Dickson (not yet superseded), Iona Herdman, with its fair companions from Mr. McGredy's nurseries, Christine and Golden Emblem, are grandly grown. There also, many of the Lyons Roses, raised by Pernet Ducher, including the famous Madame Edouard Herriot, Souvenir de Claudius Pernet and Souvenir de Georges Pernet, varieties of great distinction and having a very distinguished aspect, have (under the loving superintendance of Mr. Kenneth A. McDouall) found conditions of soil, situation, and culture, that inspire their perfect floral evolution.

Roses are, as a general rule, highly successful in the South of Scotland, especially at Monreith, the Wigtownshire residence of Sir Herbert Maxwell, who makes specialities of Oriental Lilies, and flowering trees and shrubs; Lochnich Castle, the noble residence of the Earl of Stair, where the beautiful Waltham Cross Rose, that bears my name, has proved a great success; Corsewall and Dunraggic, also in Wigtownshire; and Cavens and Arbigland, in Kirkcudbrightshire. In many of those gardens, Paul's handsome Scarlet Climber, also the Waltham Bride, and the brilliant Wichuraiana varieties, make a memorable series of artistic pictures.

My namesake Rose, raised at Lyons two years ago by M. Pernet Ducher, requires more shelter and a finer soil than I have been able to give it here. It is somewhat too delicate for our Scottish climate, though I have had exquisite flowers of it in my present garden; but I learn that in France, where it is cultivated by the Dowager Duchess of Sutherland, in southern England, and at Valparaiso in South America, it has been grown very successfully, and effectively exhibited. But those Roses, whatever their merits, are few in number, that are predestined to endure. *David R. Williamson.*

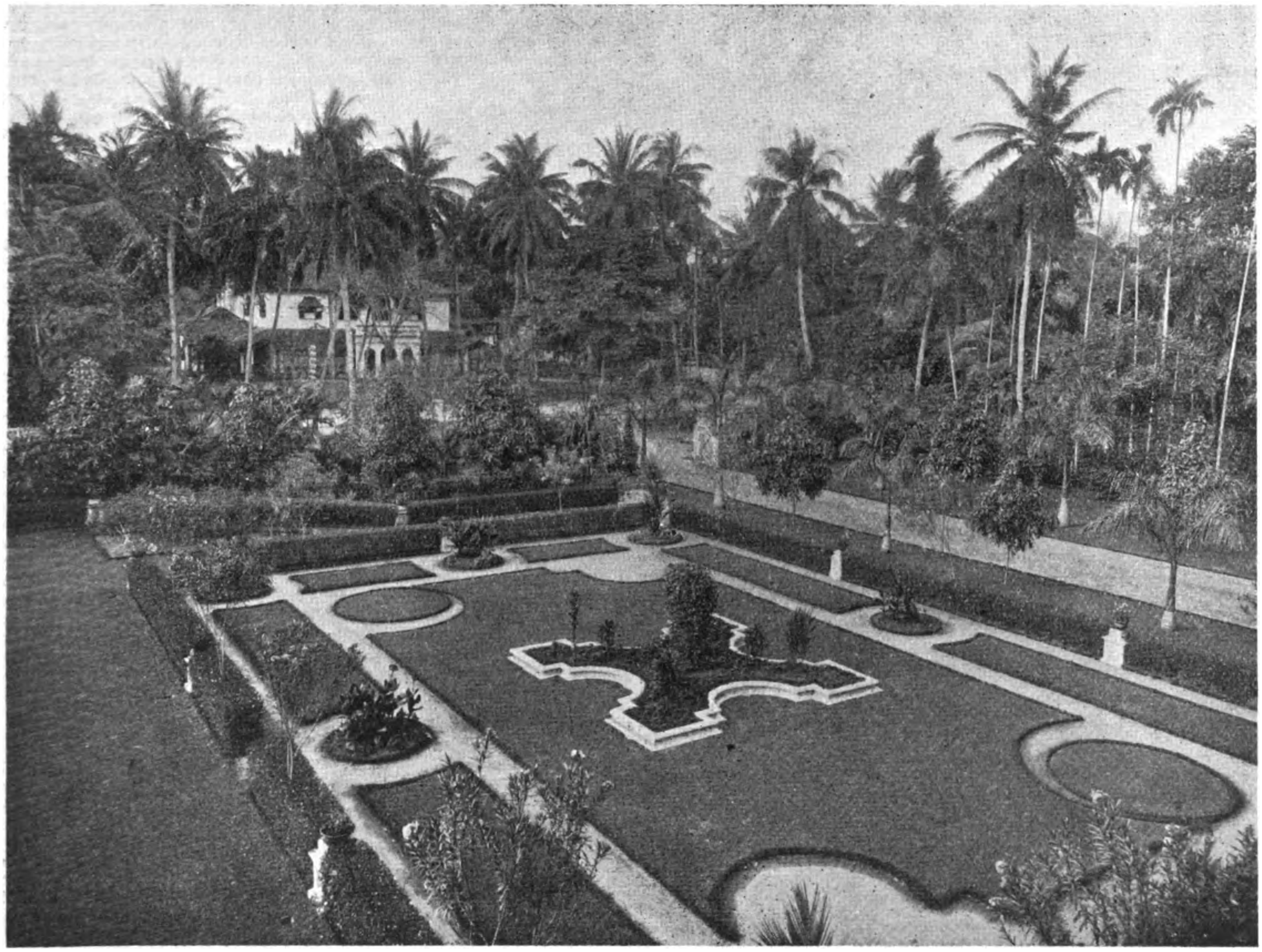


FIG. 40.—FORMAL ARRANGEMENT OF BEDS AND LAWNS IN A COLOMBO GARDEN.

(See p. 112).

RHODODENDRONS.

Rhododendrons in Nature.

(*Continued from p.* 62).

The hardiness of the Sikkim Rhododendrons stands about midway between the soft Indo-Malayan and the robust eastern Asiatic forms. The affinity of the Himalayan vegetation as a whole is, of course, with China rather than with Indo-Malaya; but the great Indo-Malayan wedge of Burma-Assam thrust up through the breach between China and the Himalaya affects the broken ends of the Sino-Himalayan chain. Thus in the maelstrom of vegetation round 97° E there is opportunity for free trade in species grown from one area to another.

The formal planting of Rhododendrons in our gardens, however artistic, gives us no adequate idea of their immense exuberance in nature. The Rhododendron forest, swimming in bloom, is a thing which must be seen to be believed; so too is the flood tide of colour on the Rhododendron moorland. Even the dry, Pine clad sopes of Yunnan dabbled with Rhododendron bushes—splashes of colour in a wide green sea—cannot be imitated. We can translate individual plants to England; the same effects we can never hope to achieve. Other effects, however, by no means to be despised, we may certainly achieve.

Rhododendrons in the heyday of their prosperity and dominion grow everywhere—on cliff and scree, in bog and meadow and thicket and wood, on the high lawns and in the hot, sticky jungle. They grow on the tree tops, or crawl on the ground like so much Ivy, or themselves form great trees, or bushes, or shrubs. Being mountain plants they usually grow on steep slopes; being forest plants they usually grow in shade; being evergreen woody plants they require a great deal of water, especially during the growing period. Mostly they are gross feeders, requiring abundant leaf manure; and being surface rooters they require an annual top dressing and a light, well drained soil. These points will be dealt with under "Cultivation." It will be enough to remark here that though Rhododendrons in general dislike lime, yet many grow on the limestone cliffs and screes of the Tibetan Marches—that though they abhor being waterlogged, the alpine bogs are blue with R. hippophaeoides and its kin; and that though, like other woody plants, they hate drought, many of them are subjected to it in western China—hot drought in spring and cold drought in autumn, often with disastrous results.

It is important to remember that though the Rhododendrons of the Himalaya, Indo-Malaya, and China, when in full bloom, afford an almost unparalleled feast of colour, this nowhere lasts very long, whereas in our gardens, by a judicious selection of species and hybrids, a more persistent effect may be obtained. Nevertheless, few sights are more astonishing than the high woods in early spring, when the snow still lies deep under the trees and the branches are tipped with ruby and green and the Rhododendrons are bursting with blossom. It may be an advantage, from some points of view, to have late-flowering species for our gardens; but all the magic has gone out of those which flower in June, July, and August. They have given their birthright for a mess of pottage; suddenly they have become banal, mere cogs in a wheel of vegetation.

It is curious how seldom one sees Rhododendron seedlings in nature. Though the Rhododendrons themselves grow in the forest, I have never yet come across a seedling there beneath the parent tree. On open banks, however, competing with Moss and Ferns and other plants, they are not infrequent. Usually they are mistaken for other species, so unlike the parent plant are they. Thus seedlings I found of a fragrant, white-flowered, epiphytic 'Maddeni" Rhododendron had very hairy leaves, though there was no trace of hairs on the adult plant. Naturally I did not connect the two, and I spent much time searching for the parent of the seedling before I realised that it was growing on all sides; it required a complete series of forms, from the hairy seedling to the glabrous adult, to convince me of their identity. The seedling leaves also are often purple in colour, though this pigmentation disappears later.

The infant mortality amongst Reododendrons must be colossal. They set a terrific amount of seed, which germinates readily. Yet how can the baby plants shoulder their way through the tightly packed crowd? The forest is already choked up. Only where a tree, dying of old age or disease, falls out and leaves a gap, can new plants squeeze themselves in; and then there are a hundred hungry candidates for every vacancy. *F. Kingdon Ward.*

(*To be continued.*)

IMPERIAL BOTANICAL CONFERENCE.

On Tuesday July 8, there was a symposium in the large lecture theatre on "The Economic Possibilities of Plant Breeding." This was opened by Mr. F. Engledow, who limited his remarks to the possibilities of hybridisation in British crops, especially Wheat. While journalists have continually traded on the possibilities of breeding, breeders have seldom approached the question in formal discussion. The manipulative difficulties are few, but certain defects in the testing and marketing of new forms impose limitations on the possibilities of breeding. In studying the cereal yield in this country it is seen that in the last forty years there has been no noteworthy increase. This may, of course, mean that after centuries of effort the maximum attainable yielding capacity has been reached, but it demonstrates the need for an altered breeding procedure for yield. A consideration of other crops and other characters suggest that the general future of breeding may be regarded with optimism.

The economic possibilities of breeding are measured by the prospects of producing new forms which will bring the grower a better financial return than the old. Enhanced returns may accrue from higher yield, better quality, and a number of other amenities. Improvements in quality, as, for example, Yeoman Wheat, hold clear promise. "Other amenities" embrace a miscellany of plant attributes, many of which indirectly affect yield and quality and all influence financial return. The question of disease resistance was considered in some detail; with good reason and with the warrant of actual achievements, it may be said that very great possibilities of improvement lie in this line alone. Other desiderata which appear reasonably possible are those of non-lodging, early ripening and winter hardiness.

Yield was next considered, and intrinsic yield as distinct from the fortuitous influences of disease and mechanical injury broadly discussed. Augmentation of intrinsic yield will not result from the finding of natural plant forms since forms of superlative intrinsic yielding capacity do not exist. The end in view should be to try to identify the plant characters which mainly govern yielding capacity. By orderly synthetic breeding optimum combinations of these characters would then have to be produced for every locality. It is indicated that the plant characters in question will prove to be those responsible for the adaptation which individual forms show to localised soils and climates. The very fact of adaptation is itself proof of the possibilites of increasing yield by breeding specially adapted forms for every locality.

Some of the possibilities are certainly distant, but many are near and well supported by fact. The outstanding new cereal forms produced in England in the past twenty years have justified themselves and justify belief in future possibilities.

Mr. M. A. Bailey followed with an account of Cotton growing in Egypt. It was demonstrated that systematic Cotton-breeding work could scarcely fail to produce results of economic value. The relatively higher economic importance of small improvements such as those effected by bulk selection was emphasized, but the value of such small improvements depends largely on the rapidity with which they are attained. Organised methods of seed-distribution and of seed-control are necessary to obtain good results from any system of plant breeding. It was recommended that in the case of a small experimental station the first effort should be towards the improvement of existing varieties by straightforward bulk selection, and that when progress in that direction is assured, attention should then be turned to the physiology of the plant.

The next communication was by Dr. R. N. Salaman who dealt with Potatos. The production of tubers in the Potato, whether or not in part a reaction to the environment, is controlled by genetic factors. The cropping capacity of a Potato plant or variety is exhibited by the individual crops of the seedlings obtained by selfing or crossing this variety. In order to measure the effects of these factors, a new method of estimation has been devised. The employment of this method shows that every plant, when selfed, produces a family the individuals of which, when grown under uniform conditions, develop crops which can be grouped in certain classes and demonstrated as a curve. Such a curve remains constant for any given plants grown in any year under similar conditions. It has been possible to isolate cropping curves which are homozygous for high cropping, low cropping, and zero cropping. There is some evidence that these "cropping capacities" are controlled by several factors which are epistatic to each other. It is possible to assure a very high percentage of high-cropping individuals occurring in a family where appropriate parents are used.

The last paper was by Mr. J. M. F. Drummond. In the group of cereals, there are still important problems which should prove soluble by the standard methods, *e.g.*, the isolation of quickly maturing Oat varieties suitable for upland districts. As regards Potatos, the outlook seems less hopeful chiefly owing to the unexpected complexity and elusiveness of the so-called virus diseases. A fuller knowledge of the inheritance of Wart disease immunity would be of great value to the practical breeder—the most promising line of advance here would seem to be the isolation of homozygous immunes.

So far as Swedes and Turnips are concerned, the genetically mixed condition of most, if not all commercial stocks is again an obstacle to progress, aggravated in the case of Turnips by pronounced self-sterility. A further difficulty is the lack of any definite criticism of feeding value. The Scottish Plant Breeding Station is attempting the isolation of homozygous Swede strains, and the feeding-value problem is being attacked by a co-ordinated scheme of research in which all the Scottish Agricultural Colleges and Research Stations are taking part. The line of work which possibly offers the brightest prospects of economic results is the exploration of indigenous forage grasses, especially with a view to the improvement of pastures. It is now clear that Rye-grass, Cocksfoot, and Timothy are "sammelarten," each comprising a great variety of types differing in habit, leaf production, duration, etc. Apart from complications due to self sterility, the chief difficulty in developing the pasture types arises out of the divergent demands of the farmer, who requires a leaf-producing type, and of the seed grower who naturally prefers a heavy seeding type. There are several alternative solutions of this economic difficulty, but it is not easy as yet to decide as to which is to be preferred.

The interest in the discussion which followed was chiefly centred in the respective qualities of the sample loaves which Mr. Engledow had produced to illustrate his paper—and which were sampled at lunch. The members who had attended the other meeting were so long occupied over questions of nomenclature that they missed this practical demonstration. So many overseas botanists (in answer to a questionnaire) had suggested a discussion of the general questions of nomenclature that a small sub-committee was formed with the idea of suggesting points for discussion. A preliminary report of this sub-committee (Miss Wakefield, Messrs. J. Britton, J. Ramsbottom, T. A. Sprague (convener), and A. J. Wilmott) had been circulated. Many of the points in this were dealt with by Mr. Sprague in a paper read before the British Mycological Society (see *The Gard. Chron.* Vol. LXXV., pp. 92, 104). Mr. Sprague emphasised the various suggestions. It is obvious that since rules of nomenclature must be international in character the conference had no power other than that of recommendation. The rules adopted at the Brussels Congress have not proved as satisfactory as was hoped, and a further trouble arises from the fact that many American workers follow a separate code. The sub-committee's suggestion would no doubt lead to compromises if they were adopted at the next International Congress, which, incidentally is to be held at Ithaca U.S.A., in June, 1926. The following resolutions were adopted :—

1. That the sub-committee on nomenclature remain in being (with authority to co-opt additional members) to continue its work and to receive and collate proposals for the modification of the International Rules of Nomenclature.
2. Certain alterations should be made in the International Rules of Nomenclature.
3. Art. 36 (invalidative names of new groups published on and after January 1st, 1908, without Latin diagnoses) should be replaced by a strong recommendation to supply Latin diagnoses.
4. All combinations which are homonyms (*i.e.*, later homonyms) should be rejected.
5. All generic names which are homonyms (*i.e.*, later homonyms) should be rejected.
6. The principle of the "Type-method" of applying names should be formally accepted.
7. Art. 55, 2° (rejecting "duplicating binominals," *e.g.*, Linaria Linaria) should be revoked.
8. The "principle of *nomina abortiva*" should be expugned from the rules.
9. The list of *Nomina generica conservanda* should be revised.
10. It should be clear how far each of the *Nomina generica conservanda* is conserved.
11. That for the future the name of a group shall not be regarded as effectively published when the description is published only with exsiccata.
12. Publication of new genera and species should be only in scientific publications and, if possible, only in such as habitually reach systematic botanists.

(*To be continued.*)

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

See Tables and Summaries, Ante, pp. 79-84).

(*Continued from p.* 101.)

ENGLAND, N.E.

Durham.—All fruit trees gave promise of bountiful crops in early spring, but during their flowering period we had almost continuous drenching rains and some frost also, but I do not think the frost did much harm. For some years past our fruit trees have been in a sad state through caterpillars devouring leaf and flower, but this season, I think the heavy rains have kept the pests in check. *Edward Tindale, Ravensworth Gardens, Gateshead.*

—Plum trees were smothered with blossom, but the cold, north-easterly winds and sharp frosts we experienced when they were in bloom ruined the crop, with the exception of Early Rivers, Kirk's, and Late Prolific, which are bearing well. Apple trees also were smothered with blossom, but for some reason many varieties set few fruits, although they came into bloom very late. The varieties Warner's King, Cellini, Stirling Castle, Lord Grosvenor, Lord Suffield, Worcester Pearmain, Ribston Pippin, and Ecklinville Seedling are bearing very large crops. Of Black Currants, we had a heavy crop, the best for the past three years. Gooseberries, Red and White Currants, were also exceptionally heavy crops. The soil is of a light, sandy nature, with a sub-soil of sand. *J. A. Woods, Beamish Park Gardens, Beamish, S.O.*

Northumberland.—Apple, Pear, and Plum trees were laden with blossom, but the fruits did not set well owing to heavy rains during the flowering period. All small fruit are carrying heavy crops of good sound fruit. Strawberries were very late in ripening. The soil in these gardens is good to a depth of 18 inches, but the sub-soil is poor with a bed of freestone. Fruit trees never do well for any length of time; in dry seasons everything is dried up. Cherries set well, and the crop promised to be above the average, but the cold, dry weather of early summer caused half of the crop to turn yellow and drop. *Wm. McCombie, Newton Hall Gardens, Stocksfield-on-Tyne.*

—The fruit crops in this neighbourhood are very variable, after a record amount of blossom. The failure of the fruits to set was probably owing to the cold and sunless weather at the flowering period, whilst sharp frosts injured the Plum blossom. Black Currants, Gooseberries, and Strawberries were good crops; green fly has been troublesome. Our soil is of a rather light, gravelly nature. *James Winder, Howden Dene Gardens, Corbridge-on-Tyne.*

Yorkshire.—There was an abundance of fruit blossom of all kinds, but owing to the cold and wet weather of spring—we had 2° of frost in May—the embryo fruits dropped wholesale. Gooseberries, Raspberries, Red and Black Currants, and Strawberries, were all good, average crops. The Apple crop is about equal to the average. Pears are very much under, and the Plum crop is a complete failure. Sweet Cherries were under the average yield, but Morello Cherries are good. Our soil is a stiff loam on the top of a stiff clay, which makes the ground very cold. *E. Knowles, The Hagg Gardens, Mirfield.*

—In nearly all cases fruit trees developed a wonderful lot of blossom, but the fruits set badly on account of the cold, wet, sunless spring. Black Currants are the best crop for years. Our soil is heavy on a layer of clay, and red sand below the clay. *Jas. E. Hathaway, Baldersby Park Gardens, Thirsk.*

—There is great variation in the Apple crop, the local variety Sharlston Pippin only having a light crop this year. In small gardens there is an abundance of filth on fruit trees in spite of lectures given locally on spraying, etc. Patches of Gooseberry bushes in cottage gardens are leafless. *J. G. Wilson, New Millerdam, Wakefield.*

Cambridgeshire.—Stone fruits, with the exception of one or two varieties of Plums, are practically failures, no doubt caused by the cold, wet weather during the early part of spring. Small fruits and Strawberries were heavy crops, and although rather late, ripened well, Strawberries particularly being large and well coloured. Apples and Pears, after a very fine show of blossom, are rather disappointing. *Arthur Sewell, 32, Barton Road, Ely.*

Essex.—The Apple and Plum crops are disappointing failures. Trees which were heavily laden with bloom have for some reason. failed to set fruits. The cause is difficult to determine, but it is certainly not owing to a very heavy crop in the preceding year. Pears, which are usually abundant, will prove only a very medium average, although without exception the trees were heavily laden with bloom. Wall fruits on the whole are exceedingly good, and the trees are clean. Bush fruits have been most prolific. Strawberries were good, but a good soaking rain was wanted to carry the later fruits on, the want of which shortened the season; the fruits also were small. Raspberries are particularly good, the variety Lloyd George justyfying my expectations. Our soil is a stiff loam on clay. *Arthur Bullock, Copped Hall Gardens, Epping.*

—Pears are a heavy crop, but there has been much damage from Pear Midge. Apples are a disappointing crop; few fruits remain on many trees that flowered well and many trees did not flower. Apple Sawfly has caused much loss. Currants are a very clean crop. *C. Wakely, East Anglian Institute, Chelmsford.*

Huntingdonshire.—There was very little Plum blossom owing to a very bad attack of aphis last year which crippled the early growth and left only late, unripened shoots on the trees. Pears are a very heavy crop. Apples, in sheltered places, are carrying a fair crop; exposed trees suffered when they were in blossom from cold, driving rains, and the fruits set badly. All small fruits were very good, particularly Strawberries and Black Currants. *A. V. Coombe, Ramsey Abbey Gardens.*

Lincolnshire.—We have a good average crop of Apples, Bramley's Seedling being the best. Some other varieties were blighted badly. Pears also are very good, but we have very few Plums, a lot of Plum trees are without a single fruit. We had a fine crop of Black Currants, but very few Red Currants. Gooseberries were half a crop. Raspberries were very good and Strawberries a very heavy crop of fine fruits; indeed Strawberries were never better. *Thomas Cox, Hainton Hall Gardens.*

—The fruit crops generally are satisfactory, except Plums and Damsons, which are carrying very thin crops. Apple trees were covered with blossom but the fruits failed to set so freely as was expected. Bush trees are better cropped than standards, especially those growing in grass. All Pear trees are carrying grand crops and the fruits will require much thinning. Cherries were under the average yield. Gooseberries, on the whole, were equal to an average crop. Red Currants and Raspberries also were good average crops. Insect pests have not been very troublesome and all fruit trees are clean and healthy. *F. J. Foster, Grimsthorpe Castle Gardens, Bourne.*

(*To be continued*).

FRUIT REGISTER.

EARLY APPLES.

Most early varieties of Apples are appreciated best as gathered from the trees, as their qualities are not improved by keeping. The best early sorts are not a success in all districts, but most of them thrive in warm soils of medium texture with free drainage; light soils suit early Apples.

Such varieties as Langley Pippin, Red Margaret, Irish Peach, Mr. Gladstone, and White Transparent, may all be grown as bushes and half standards. They should be mulched with short stable manure during the summer. Careful pruning is essential as some sorts fruit on the tips of the branches.

Beauty of Bath is a very pretty Apple and one of the best exhibition varieties in August and early September. The flesh is soft, with a brisk flavour, and the fruits are at their best when eaten as soon as they are gathered. This variety is most fertile when planted in proximity to Lord Suffield or Worcester Pearmain varieties, these being situated on the west side.

Bush trees fruit exceedingly well and cordon, half standard and espalier trees also bear well. Dressings of phosphatic manures are to be recommended for this early Apple. The fruits will develop an intense colour if a weak solution of sulphate of iron is applied during June or early July. The coloration may also be enhanced for show purposes by gathering and wrapping the fruits in tissue paper. *Pomona.*

VEGETABLE GARDEN.

SPRING CABBAGES.

The failure of the Spring Cabbage crop to mature at its proper season last spring caused a deficiency of green vegetables in many gardens, and was a forcible reminder of the great value of this simple crop. The Spring Cabbage comes in at a time when most of the winter greens are over and fills in the gap between the last of the winter greens and the earliest Peas.

As the heads are most valuable when they are available early, it is the practice of many gardeners to grow Spring Cabbages on a very warm, sheltered border, and it is surprising how very early useful heads may be cut from plants grown in snug, warm situations.

The ground for Cabbages should be in good heart, for the Cabbage takes a considerable amount from the soil and nothing exhausts land sooner than allowing Cabbage stumps to remain and form big secondary growths. Land that has been cropped with Onions is often selected as a site for the Spring Cabbage plot. The Cabbages may also follow in succession to second-early Potatos, but whatever land is chosen it should contain a generous amount of well-rotted manure. The seeds are usually sown during the second week in August, but gardeners in different parts of the country have their own dates for sowing, and it is found that a second sowing made after a fortnight's interval will often pay, as either the one lot of seedlings or the other may be much the finer. The seed-bed may be made on a south or west border and the ground should be worked to a fine tilth. The seeds should be sown thinly and it is advisable, where birds are troublesome, to place nets over the bed. As a rule the plants will be ready for setting out early in October. Some growers plant them one foot apart and use every alternate plant as Spring greens, thus allowing those that remain to constitute the crop all the room they need as they develop. A dusting of soot along the rows will not only serve to ward off slugs but fertilise the plants as well. In the spring, when the plants are beginning to make active growth, a little nitrogenous fertiliser is beneficial, but not much should be given or the hearts will grow loose; a teaspoonful of nitrate of soda or sulphate of ammonia to each plant is quite sufficient. The plants also respond to applications of liquid manure, which is a very safe fertiliser for any crop. If the bed is kept free from weeds and the soil stirred with the hoe, the plants should make good growth and be ready for use at a time when young, tender greens are much appreciated. There are many excellent varieties of Spring Cabbages, including Flower of Spring, April, Early Offenham, Harbinger and First and Best. Varieties especially suited for the north were enumerated in *Gard. Chron.*, July 26, p. 53. *T.*

HOME CORRESPONDENCE.

Flower Show Judges of the Future.—I was pleased to note that Mr. Macself had taken this matter up in your issue of August 9, as the promising young gardeners of the past few years have not had the opportunity to officiate as judges at our leading flower shows, because the R.H.S. and the other leading Societies have invariably stuck to the veterans (for all of whom I have the greatest respect), but when one considers the great strides horticulture has made during ten years it is essential that young blood should be introduced to enable us to progress with the times. This could be easily managed providing the R.H.S. took the lead in appointing a few young men as judges when, I feel sure, all other Societies would be guided by their action. Unless something is done in this direction to enable our promising young gardeners to gain experience I fear the standard of judging in the near future will not bear comparison with pre-war times. *R. Greenfield, Leamington Spa.*

White-flowered Tulips.—I feel highly gratified that Mr. Jacob (p. 47) should have interested himself so keenly in my remarks on Tulips. I trust that he will continue to do so. His trial of white-flowered Tulips under glass should prove of great interest and it is to be hoped that he will make known his observations without delay. I would suggest, if he has the house accommodation and the time to conduct the trials in detail, that it should be primarily arranged to find out how soon such and such a variety may be obtained in flower at its best. It is difficult to conduct experiments of this nature for it must be ascertained that all the varieties are from the same stock grown in the same locality. The storage conditions must be the same, the potting done on the same day, and the cultivation details identical. The greenhouse, too, should have an even temperature throughout. Could not the Royal Horticultural Society help in trials of this description, for they would be most valuable. With regard to the selection of early varieties for bedding, Lady Boreel is the best white with me. It is very pure and of perfect shape. Mr. Jacob will be pleased with Diana and Pelican. Brunhilde might well have been included in the list, as it undoubtedly forces well and gives a fairly long stem, but it was on account of the creamy-yellow flush in its petals that I did not take it into consideration. The segments are waved and it is distinct. It is unfortunate that Zwanenburg has black anthers. The interior of the flower is greatly marred by the spilt pollen when the flower is about at its best. It is good for garden decoration, but I am afraid one has to be very critical in the case of novelties sold at a high price. The new, yellow-anthered, white Darwins leave Zwanenbnrg far behind. *R. K.*

SOCIETIES.

ROYAL HORTICULTURAL.

August 12.—In spite of the holiday season there was a highly creditable exhibition on the occasion of the ordinary fortnigthly meeting of the Royal Horticultural Society held at Vincent Square, Westminster, on the above date. Gladioli, Roses, and collections of hardy plants were the chief subjects exhibited.

Orchid Committee.

Present: C. J. Lucas, Esq. (in the chair), Messrs. Gurney Wilson (Secretary), Jas. O'Brien H. T. Pitt, Henry H. Smith, Arthur Dye, Fred. K. Sander, Charles H. Curtis, John C. Cowan, A. McBean, T. Armstrong, E. R. Ashton and Fred. J. Hanbury.

AWARD OF MERIT.

Odontonia Joiceyi (*Odontonia Pittiae* × *Odontoglossum Tityus*) from Messrs. Charlesworth and Co., Haywards Heath. The plant shown was a very small specimen with an abnormally large flower, which gives great promise when the hybrid is matured; even now it is very beautiful. The Odontonias were among the last developments of the late Joseph Charlesworth, and Odontonia Pittiae (M. Blueana × Odm. Harryanum) was the first of the class, with which the present novelty has, by crossing again with Odontoglossum, been secured. The primary parents are two Odontoglossums and one Miltonia, the latter taking the lead in the general shape of the flower. The sepals and petals are heavily blotched and spotted with bright magenta-purple, the white ground showing between the markings and at the tips. The broadly ovate, flat labellum has blotches of magenta-purple on a white ground, the basal half being striped and veined with purplish crimson; the prominent crest is yellow.

GROUPS.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood) was awarded a Silver Banksian Medal for a very interesting and effective group, at the back of which Odontoglossum crispum, including the variety xanthotes, Odm. ardentissimum and other Odontoglossums, were arranged with Cattleyas and Cypripediums. Numbers of rare species were also staged, including Zygopetalum maxillare Gautieri, with bright blue labellum; Promenaea Crawshayana with many blooms; Microstylis Reedii with metallic-tinted foliage and flowers; a selection of Cirrhopetalums; the elegant Oncidium flexuosum; Catasetum fimbriatum, Angraecum Scottianum, and rare Masdevallias. Among the hybrids the bright carmine-red Miltonioda Harwoodii and the large and very showy Vuylstekeara Memoria Joseph Charlesworth were shown at their best.

Messrs. Stuart Low and Co., Bush Hill Park and Jarvisbrook, Sussex, were awarded a Bronze Banksian Medal for a pretty group composed principally of Cattleyas and Laelio-Cattleyas. Among them were noted L.-C. Clarilaw (L.-C. Helius × C. Schroderae), a clear yellow flower of good shape; Brasso-Laelio-Cattleya Ancona (B.-L. Jessopii × L.-C. Luminosa), citron yellow; Brasso-Cattleya Ilene in two distinct forms; Cattleya Eira (labiata × Thurgoodiana), a showy production of Messrs. Low, and a selection of Cypripodiums.

Messrs. Cowan and Co., Southgate, were accorded a Vote of Thanks for a small but select group of Cattleyas, the best of which was a second plant of their new Cattleya Mona (regina × Dowiana aurea) in which the broad crimson-purple of its C. Warneri ancestor is well shown; C. Hassallii alba, with clear white petals and rich purple lip; C. Hardyana alba and a very dark C. Hardyana; a good form of C. Venus and the richly coloured L.-C. J. C. Ansaldo.

Floral Committee.

Section A.—*Present*: Messrs. H. B. May (in the Chair), J. F. McLeod, E. R. Janes, D. B. Crane, H. J. Jones, J. M. Bridgeford, Andrew Ireland, W. Howe, J. B. Riding, W. P. Thomson, Chas. E. Pearson, W. Stephens, W. B. Gingell and G. W. Leak.

Section B.—*Present*: Messrs. Gerald Loder (in the Chair), Jas. Hudson, G. Reuthe, F. G. Preston, G. Yeld, W. G. Baker, H. V. Warrender, R. D. Trotter and E. A. Bowles.

First-Class Certificate.

Hoheria populnea lanceolata.—A beautiful shrub bearing a profusion of silvery-white flowers which appear in two's or three's from the axils of the narrowly-lanceolate leaves. The latter are glossy, light green above and greyish beneath, and they have serrated margins. The species hails from New Zealand and was figured in a supplementary plate issued with *The Gardeners' Chronicle* of November 23, 1901. The variety lanceolata is quite distinct and promises to be a finer flowering shrub than the type, which has broader foliage. Shown by G. W. Loder, Esq., Wakehurst Place, Ardingley, Sussex.

Awards of Merit.

Gladiolus E. H. Liddell.—A magnificent Gladiolus with large, well expanded flowers of a lovely rosy-mauve colour, with a white base to the lower petal. Shown by Messrs. J. Kelway and Son.

Dierama pulcherrima var. Kingfisher.—In this variety of a charmingly graceful plant, the flowers are large and of a lovely shade of rosy-lavender with a silvery sheen. Shown by the Donard Nursery Co., Newcastle, Co. Down.

Clethra Fargesii.—In this species the white flowers are borne in long racemes from the ends of the twigs. The flowers appear to be larger and the racemes longer than in the better known C. alnifolia. Shown by Col. Stephenson Clarke C.B. (gr. Mr. Corner), Borde Hill, Cuckfield, Sussex.

Bomarea cantabrigiensis.—This is the result of crossing B. caldasiana with B. hirtella. It is a free-growing, semi-climbing plant and bears large umbels of narrowly tubular flowers at the end of the long growths. There are so many as two dozen or more flowers in each umbel and each has a long reddish pedicel. The flowers are about an inch and a half long; the sepals are red and the petals dull yellow freely spotted with red. This hybrid is quite hardy at Cambridge. Shown by the Director, Botanic Gardens, Cambridge.

Hydrangea opuloides (Hortensia) var. albo-rosea.—This is a strikingly handsome form which in all probability was discovered in Japan by Mr. Charles Maries. The sterile flowers have three or four segments of a bright red shade over a rosy ground colour and these constitute the chief attraction, the fertile flowers being small and greenish white. Shown by Mr. Gerald W. Loder, Ardingley.

Hydrangea opuloides (Hortensia) var. coerulescens.—In this variety the leaves are more like those of a small H. Hortensia and the flower heads are more compact than in the red form; the fertile flowers are blue and the sterile ones are either white or rose coloured. Shown by Mr. Gerald W. Loder.

Groups.

A comprehensive display of Gladioli, tastefully arranged in ornamental vases, was staged by Messrs. Sutton and Sons just inside the entrance. Included in the collection of many varieties were Yellow Hammer, Red Emperor, scarlet with white blotch; Odin, salmon-scarlet; White City, and L'Immaculée, two good white flowers; Marechal Foch, an extra large rose-pink spike with open blooms; Early Sunrise, cerise with yellow blotch; and Master Wietze, violet-purple. The same firm also displayed a unique collection of Zinnias in some thirty or forty varieties representing their Giant Strain, with flowers measuring between five inches and six inches across, as well as their Bedding Strain, including the variety Fireball of intense scarlet colour. There were also pygmy-flowered species, such as Zinnia Haageana which contrasted strangely with the mammoth-flowered types.

Messrs. Maurice Prichard and Son had a corner group of herbaceous plants, and noteworthy subjects were Crinum Powellii, Poterium obtusum, with spikes of rose-purple flowers; Kniphofia July Scarlet, possessing long, finely-coloured heads; and the graceful Thalictrum dipterocarpum.

Mr. Amos Perry had a large display of hardy flowers, amongst which were Chrysanthemum maximum Excelsior, free-flowering and large; Gladiolus in variety, including Red Emperor, of brilliant colour; Physostegia virginiana, the False Dragon-head; Liatris pycnostachys, a quaint purple flower, the terminal blooms opening first; Kniphofia Royal Standard, yellow and orange-scarlet; a truly double form of Lilium tigrinum and beautifully spotted blooms of Tigridia grandiflora, in yellow, white, and scarlet colours.

Messrs. B. Ladhams, Ltd., made a feature of Coreopsis auriculata superba, with large, bright yellow flowers and reddish-brown blotch at the base of the ray florets; Lavatera olbia rosea, Ladham's variety, with large rose-coloured flowers; hybrids of Lobelia syphilitica in many shades of colour, and Dahlia Attraction, representing a new break, the rose-purple flowers possessing long, tubular, central florets.

Messrs. Lowe and Gibson brought a large collection of seedling Gladioli, many of which were of outstanding colour, and included in the group were large-flowered Montbretias. Gladioli were also represented by a striking group staged by Messrs. R. H. Bath, Ltd., the primulinus and large-flowered sections being exhibited in quantity. A few of the best varieties were Blue Coeleste, deep blue; Souvenir, yellow; Clear Eye, scarlet with white centre; La Couronne, cream; Madame M. Sulley, cream with deep scarlet-orange centre; La Cousance, apricot; and Rosandra, salmon-rose.

Herbaceous Phloxes were charmingly staged in the form of a floor group by Messrs. H. J. Jones, Ltd., the plants being shown in circular baskets. Among the finer varieties were Mrs. Jeans, large individual flowers of clear blush-pink colour; Thor, rich, salmon-scarlet; Etna, vermilion-scarlet; Dr. Charcot, lavender-blue and of medium height; Le Mahdi, still one of the best of the purplish-blue shade; and Imperator, rose-carmine.

Messrs. R. L. Russell, Ltd., displayed a good strain of Celosias in yellow, orange, and crimson colours, together with Cannas in variety and Clematis, of which Crimson King, ruby-red; Lady Northcliffe, blue; and King Edward VII., light blue with tiny white spots were excellent. Sweet Peas in fine condition were exhibited by Messrs. R. Bolton and Son, the more recent introductions being Wembley, lavender; Mammoth, bright orange-scarlet; Empire, pure rose; Comrade, light salmon-pink; Supreme, clear pink; and Angele, with rose-mauve standards and blue wings.

Dahlias were well represented in the group staged by Messrs. J. Cheal and Sons, and the Paeony-flowered section included Dream, amber; Aphrodite, white; and Yellow Prince, bright yellow.

In the collection of Gladioli from Messrs. James Kelway and Son, varieties of great merit among the large-flowered type were World's Peace, white; E. H. Liddell, rosy-mauve with white blotch; H. B. Stallard, scarlet and white; and Baldwin, a fine spike of rich vermilion. Primulinus varieties included Phyllis Kelway, yellow; Rev. J. Stubbs, scarlet, and Lord Dawson, apricot and salmon-pink. Major Churcher, Lindfield, also showed a number of seedling Gladioli. Varietal forms of the graceful Dierama pulcherrima were staged by The Donard Nursery Co., Kingfisher, a rose-coloured flower, was one of the best of the named varieties. Phloxes and other herbaceous subjects were staged by Mr. W. Wells, Junr., and Mr. G. Reuthe was also responsible for a miscellaneous group of hardy flowers, including Lilium sulphureum and well-flowered branches of Eucryphia pinnatifolia.

Messrs. R. and G. Cuthbert showed their Giant Strain of Streptocarpus in many shades of colour. Messrs. Isaac House and Son made a representative display of varieties of Scabiosa caucasica. The flowers were of large size, held on rigid stems and a few of the best were Harold, dark blue; Mrs. Isaac House, the best white; Edith, pale blue; and Constancy, blue.

Mr. W. Yandell showed Violas in variety, Mauve Queen, Primrose Dame, Klondyke, yellow; and W. H. Woodgate, light blue, being prominently displayed. Double Hollyhocks represented by large spikes were superbly shown by Messrs. James Vert and Son, the varieties Salmon Queen, Queen of the Yellows, Princess, pink, and Alba Superba being of great merit.

Medal Awards.

Gold.—To Messrs. Sutton and Sons.

Silver-Gilt Banksian.—To Messrs. Robert Bolton and Son; Messrs. Chaplin Bros.; Mr. H. J. Jones; Messrs. J. Kelway and Son.

Silver Banksian.—To Messrs. Allwood Bros.; Messrs. R. H. Bath, Ltd.; Mr. Edwards; Messrs. Isaac House and Son; Messrs. Lowe and Gibson; Major G. Churcher, Lindfield; Messrs. R. and G. Cuthbert; Messrs. J. Cheal and Sons; Donard Nursery Co.; Messrs. W. Easlea and Son; Messrs. B. Ladhams; Mr. J. H. Pemberton; Messrs. Sutton and Sons (Zinnias); Messrs. J. Vert and Son; Mr. Yandell.

Bronze Banksian.—To Mr. W. Wells, Junr. Messrs. M. Prichard and Sons; Messrs. D. Prior and Sons; Mr. Amos Perry; Mr. G Reuthe.

Fruit and Vegetable Committee.

Present: Messrs. J. Cheal (in the chair). W. Poupart, H. S. Rivers, Geo. F. Tinley, G. Kelf, E. Neal, A. Bullock, E. Harriss, F. Jordan, E. Beckett, W. Bates, W. H. Divers, A. N. Rawes and S. B. Dicks.

The few subjects submitted for award included a Blackberry said to ripen in July, but the specimens shown at the meeting were scarcely ripe and the Committee considered it was not superior to the Himalayan Blackberry.

Messrs. Daniels Bros. showed their fine late Black Currant September Black, together, with a few branches of Apples of the varieties Grenadier, Bismarck, Emneth Early and Red Victoria.

Messrs. Bunyard and Co., Ltd., showed a fruit of the flat Peach of China, a Peach with a very irregular contour and said to have been known in this country for a great many years. This firm also exhibited a collection of some thirty-nine varieties of Gooseberries; Oullin's Golden Gage, Blue Rock, Utility and Burbank Plums and such early Apples as Cardinal, Lady Sudeley, Beauty of Bath, Maidstone Favourite and White Transparent.

In the competition for the Bunyard Medals offered for Peaches, a Silver Bunyard Medal was awarded to Mr. A. T. Goodwin, Maidstone, for the varieties Bellgarde, Peregrine, Crimson Galande and Diamond. The only other exhibitor in this competition was Mr. G. R. Burness (gr. Mr. J. L. Waterman), Syndale Gardens, Faversham, who showed very dark coloured fruits of Peregrine.

NATIONAL ROSE AND SCOTTISH NATIONAL SWEET PEA, ROSE, AND CARNATION.

August 6th and 7th.—The provincial show of the National Rose Society was held in the spacious Kelvin Hall, Glasgow, on the above dates in conjunction with the annual show of the Scottish National Sweet Pea, Rose, and Carnation Society. The last occasion upon which the provincial show of the National Society was held in Scotland was in 1903.

The number of exhibitors who arrived from the south was small, but many entries were cancelled by wire on the previous day. Weather conditions a day or two before were exceedingly bad, and many flowers were spoilt. The only southern trade exhibitors in the competitive classes were Mr. John Mattock, Oxford, and Mr. E. J. Hicks, Twyford. There were two sections of the schedule, viz., prizes offered by the National Rose Society and those offered by the Scottish Society. The entries in the first section were very poor, but the latter section had its classes fairly well filled, and competition was good. Sweet Peas were, as usual, a strong feature, and the flowers were of the high excellence that is generally associated with this show. Border Carnations were also remarkably fine for the season.

National Rose Society's Awards.

The principal class was for thirty-six blooms of distinct varieties of Roses, and the first prize carried with it the Jubilee Trophy and a Silver-Gilt Medal. It was won by Mr. Sandy Dickson, Dundonald, Belfast, with a very even lot. Second prize went to Messrs. Adam and Craigmile, Aberdeen, and third to Messrs. T. Smith and Sons, Stranraer; Mr. W. Slinger, Newcastle, Co. Down, was fourth. In the class for twenty-four blooms, distinct, Mr. Dickson again excelled, followed by Messrs. D. and W. Croll, Dundee, and Mr. W. Slinger in the order named. The latter was first for an exhibit of twelve blooms of Roses introduced since 1920, Messrs. T. Smith and Sons being placed second. Mr. James Fairley, Cairneyhill, Dunfermline, won first prize for a basket of Roses, one variety; the second and third awards going to Mr. Dickson and Messrs. T. Smith and Sons respectively. Messrs. Alex. Dickson and Sons, Newtownards, won the chief award for three baskets of decorative Roses, with superb examples of Betty Uprichard, Lady Inchiquin, and the new Shot Silk. In the class for twenty-four distinct varieties of decorative Roses there was only one entry; it was from Mr. John Mattock, and in the class for twelve decorative varieties the sole representative was Mr. E. J. Hicks, Twyford.

Groups of Roses.

These are generally a strong feature at a National Rose Show, but there was little competition on this occasion. The first prize for a group shown on a space not exceeding thirty feet by four feet, was won by the only entrants, Messrs. A. Dickson and Sons, Newtownards. This was splendidly staged and we noticed Shot Silk, Betty Uprichard, R. E. West, and Colonel Oswald Fitzgerald, in grand colour, Messrs. D. and W. Croll, Dundee, were placed first for a group staged on a space not exceeding twenty feet by four feet. The effect of this collection, in which the Queen Alexandra and Golden Emblem predominated, was spoiled by an excessive display of receptacles. Mr. James Fairley was the only noteworthy competitor in the class for a group of cut Roses on a space not exceeding ten feet by three feet.

Amateurs.

In the amateurs' classes the Jubilee Trophy for twenty-four blooms, distinct varieties, was won by Mr. J. E. Turner, Gourock. Other winners in this section were Mr. James Kerr, Stewartown; Mrs. Davies, Parton; Mr. John Russell, Newton Mearns and Mr. J. McLelland, Glasgow. Mrs. Courtney Page, Enfield, excelled in the artistic classes.

New Seedling Roses.

Two *Gold Medals* were awarded. One of these went to Messrs. S. Bide and Sons, Farnham, Surrey, for the semi-climbing Rose, *Phyllis Bide*. This resembles Carienvogel, the dwarf Polyantha, in climbing form, and has already been described in these columns when shown at the autumn National Rose Show. The second gold medal was awarded to Messrs. S. McGredy and Son, Portadown, for *Mrs. Barraclough*, a Rose somewhat after the style of Mrs. Courtney Page. We understand that the National Rose Society has adopted a new method of judging in regard to new seedling Roses, and if the Glasgow awards are a criterion it is time it was altered.

Certificates of Merit were awarded to *John Russell*, shown by Messrs. Dobbie and Co., Ltd., Edinburgh; *Doris Dickson*, shown by Mr. A. Dickson, Belfast; *Margaret McGredy* and *Mrs. E. Gallagher*, both shown by Messrs. McGredy and Son.

John Russell is the new crimson Hybrid Tea which won the gold medal at Bagatelle this season. It is a superb variety, but was obviously out of colour at Glasgow. It promises to be one of the leading exhibition crimson Roses. *Doris Dickson* is a Rose somewhat smaller but more shapely than Gorgeous, and reminds one of the colour of that Rose at its best. We were impressed with this variety. *Margaret McGredy* has often been described and is really a vermilion self. *Mrs. E. Gallagher* is a dark crimson and its scent is its chief attraction.

Trade Displays.

The trade exhibits were not numerous. The National Society does not allow non-competitive exhibits which, we think, is an error. The Scottish Society, however, acts differently, and the exhibits of this type are to be credited to their portion of the show. Without these exhibits the Kelvin Hall would have presented an empty appearance. We shall deal with the Scottish section of the show in our next issue.

ROYAL LANCASHIRE SHOW.

The Horticultural Section of The Royal Lancashire Show, held at Manchester on July 1 and following days, was accommodated in one very large tent. The exhibits reached a very high level of excellence and included groups of miscellaneous plants, Sweet Peas, Tree Carnations, hardy perennials, collections of cut Roses and vegetables. Special mention may be made of Messrs. Cypher and Sons' group of miscellaneous plants, and the display of hardy perennials and cut flowers by Messrs. Bees Ltd.

Several trade exhibits contributed to the success of the show. Messrs. Sutton and Sons exhibited flowers, fruits and vegetables, for which the Society's Gold Medal was awarded.

Messrs. Dickson and Robinson showed Gladioli, Stocks, Dahlias, Asters, etc.

Messrs. Dickson, Brown and Tait showed a large collection of vegetables; Messrs. Alex. Dickson and Sons, Newtownards, exhibited Roses, and Sweet Peas; Messrs. Herd Bros., Penrith, Sweet Peas; Messrs. S. Broadhead and Sons, Huddersfield, a rockery and formal garden and Messrs. T. R. Hayes, also a rock garden, all of which obtained the Society's Gold Medal.

Other awards were as follow:—For a group of miscellaneous plants in or out of bloom. first, Messrs. J. Cypher and Sons, Cheltenham; second, Mr. W. A. Holmes, Chesterfield; third, Mr. T. M. Petch, Great Horton, Bradford; for six Orchids, first, Messrs. J. Cypher and Sons; for a collection of Sweet Peas on a space 20 feet by 5 feet, first, Messrs. Robert Bolton and Sons; for eighteen distinct varieties of Sweet Peas, first, Mr. W. Scott, Styal, Cheshire; second, William Weaver, Mold, N. Wales; for twelve distinct varieties of Sweet Peas; first, Mr. J. S. Procter, Sale; second, Mrs. M. Oliver; for a collection of Carnations, first, Mr. C. Engelmann, Saffron Walden; for a collection of cut Roses, first, Messrs. Bees Ltd., Liverpool; second, Messrs. Wheatcroft Bros., Gedling, Notts; for a collection of hardy perennials, first, Messrs. Bees Ltd.; second, Messrs. Harkness and Sons, Bedale.

Wm. Robinson, Garstang, gained the prize in the class for a collection of vegetables.

Obituary.

Reginald Malby.—It is with unfeigned regret that we record the death of Mr. Reginald Malby, the well-known horticultural photographer, who died on the 7th inst. after only a few days illness, in a hospital near Manchester. Mr. Malby had gone to that district to take photographs for the *Agricultural Gazette* and was taken ill with pneumonia and pleurisy during his work. He was removed to a hospital, made comfortable and given every care, but he had been working very hard for a considerable number of years without taking a holiday, and could not command the resistance to combat his illness and died less than a week after his admission. Mrs. Malby had been summoned and was able to be with him in his last hours, which must have been a comfort to the devoted couple. Mrs. Malby is left with five children, four of whom are of tender years and they all will greatly miss the tender care of a devoted father and husband. Mr. Malby was exceedingly well known in horticultural circles and his fine work will doubtlessly keep his memory green for long years to come. He was also a keen lover of alpine plants and has left three books on the subject which made him many friends who will mourn the too early end of an able and kindly man. Although Mr. Reginald Malby was only forty-five years old he was the proprietor of a photographical business of world-wide fame. For some years past very few issues of *The Gardeners' Chronicle* have appeared without one or more reproductions from his skilfully executed photographs. The supplementary plate in our issue of August 9 was from one of his fine plant portraits.

ANSWERS TO CORRESPONDENTS.

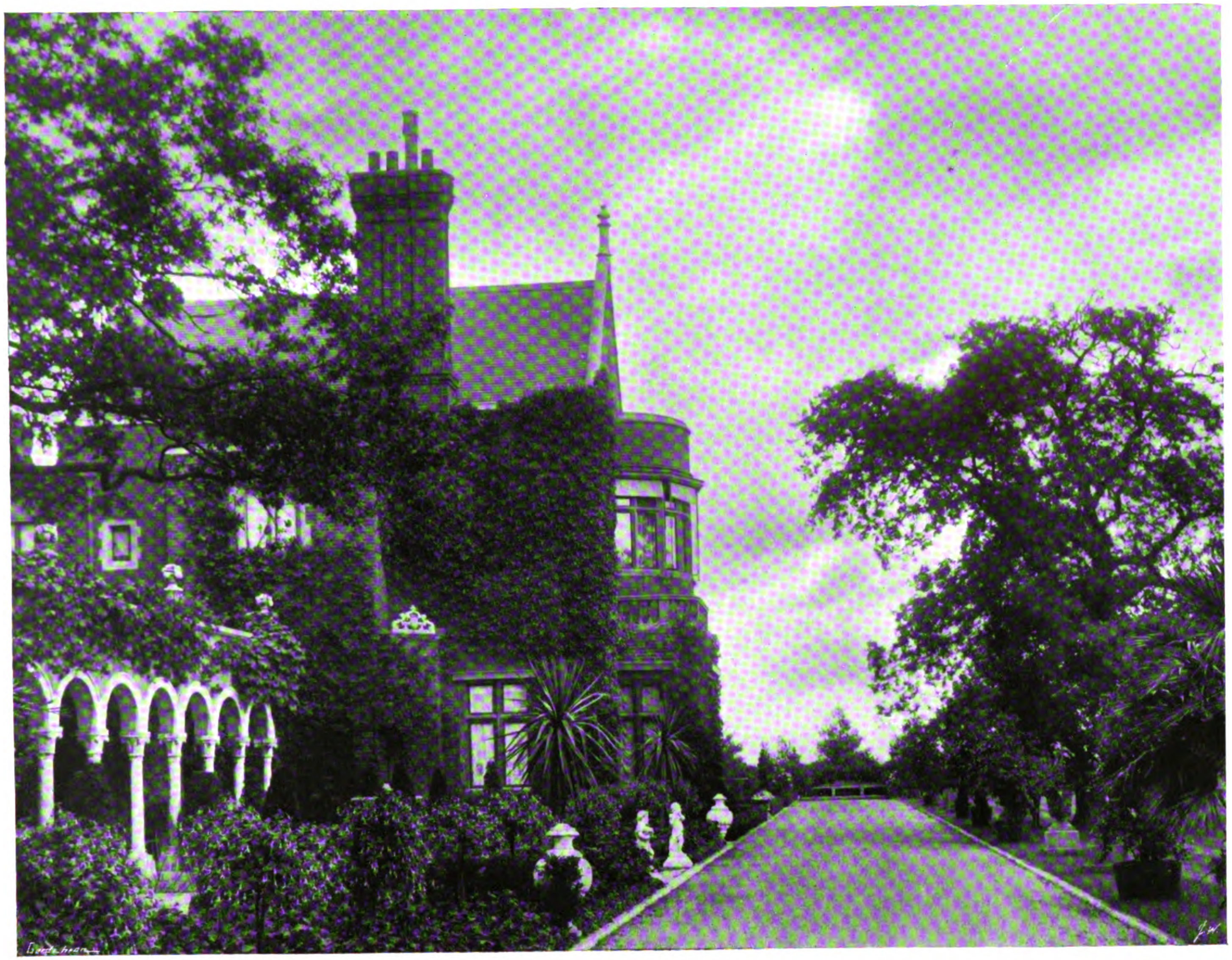
Narcissus Bulbs Diseased: *A. Y.* The Narcissus bulbs are affected with the eelworm Tylenchus devastatrix. The bulbs should be treated with hot water without delay. This treatment consists in a three-hour immersion in hot water kept at a constant temperature of 110° F. Specially designed apparatuses are on the market for the treatment of this disease and particulars may be obtained from Messrs. Barford and Perkins, Peterborough. and Messrs. Chas. Hearson, Willow Walk, Bermondsey, S.E.

Onions Rotting: *F. B.* The Onions are affected with a bacterial rot, and it would be wise to lift the crop at once, storing the bulbs in a dry, warm shed. All badly affected bulbs should be burned.

Raspberries not Fruiting: *A. W. K.* The Raspberries appear to have been over-fed and consequently are making leaf-growth at the expense of fruit formation. We advise you to give dressings of kainite or sulphate of potash during the coming autumn and to thin out the new canes at once so that those retained may have plenty of room for development, as well as light and air.

Communications Received.—C. F.—F. P.—H. G. D. J. T. W.—R. K.—J. B.—A. B.—F. S. H.—A. W. K. G. H. D.—J. J.—Hon. A. C.—H. C.

Supplement to The GARDENERS' CHRONICLE



THE TERRACE WALK AT WARREN HOUSE, KINGSTON, SURREY.

THE Gardeners' Chronicle

No. 1965—*SATURDAY, AUGUST* 23, 1924

CONTENTS.

Alpine garden—
  Phlox subulata Gaynor Adams... ... 128
  Viola gracilis Lady Crisp 128
Annuals for greenhouse and conservatory decoration 128
Books notices of—
  All about the Rose in Simple Language 128
British Pteridological Society 124
Bulb garden—
  Chionodoxa Luciliae 124
  Hyacinths for beds in a formal garden 123
  Pink and rose coloured Tulips 123
Erinacea pungens ... 136
Fruit crops, remarks on the condition of the 135
Garden-craft in the Canticles 130
"Gardeners' Chronicle" seventy-five years ago 122
Hardy flower border—
  Astilbe simplicifolia hybrida 127
  Interesting Composites 127
  Inula Royleana ... 127
Horticulture at the British Empire Exhibition 133
Imperial Botanical Conference 133
Malby, the late Mr. R. 136
Nursery Notes—
  Messrs. Frank Cant and Co. 132
Obituary—
  Dunn, John 140
Rhododendrons 124
Societies—
  Aberdeen Horticultural 137
  Deeside Field Club ... 136
  Royal Caledonian Horticultural ... 136
  Scottish National Sweet Pea 138
  Shropshire Horticultural 138
  Whitehall and District Horticultural ... 136
Stephens, Mr. W. ... 122
Strawberry The Duke 136
Trees and shrubs—
  Cornus arnoldiana ... 125
  Grevillea rosmarinifolia 125
Vegetable garden—
  The Leek 134
Warren House, Surrey 131
Week's Work, the ... 126
Welsh garden, notes from a 129

ILLUSTRATIONS.

Hoheria populnea lanceolata 125
Hyacinths in a formal garden 123
Stephens, Mr. W. portrait of 122
Warren House: loggia and fountain terrace, 127; the Japanese garden, 129; the old English garden, 133; view of the lake and waterfall ... 131

SUPPLEMENTARY PLATE.

Terrace walk in Warren House Gardens, Kingston.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 60°.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 20, 10 a.m.: Bar. 29·6.: temp. 60°. Weather, Showery.

Carbon-Dioxide and Increased Crop Production.

ENQUIRY into the possibility of increasing yields of crops by augmenting the amount of carbon-dioxide in the atmosphere has been carried out during the past few years in the Cheshunt Experimental and Research Station.* The great initial difficulties attendant upon maintaining a high percentage of carbon-dioxide in the atmosphere of a glass house have now been overcome. The method which has proved successful is that of producing a rapid evolution of the gas by means of bi-carbonate of soda and sulphuric acid, and whilst the gas is being liberated, maintaining a good circulation of air within the house by means of a fan. By these means it has been found possible to maintain a high average percentage of carbon-dioxide. These preliminaries having been disposed of successfully, the investigators, Messrs. Owen Owen and P. H. Williams, proceeded to ascertain the results of increased amounts of carbon-dioxide on the yield of Tomatos. So far only one series of experiments has been completed; but more are being undertaken during the present year. In the completed series, one house contained on the average ninety parts in ten thousand of carbon-dioxide, that is, thirty times the average amount present in the atmosphere; another house contained sixty parts per thousand, and another thirty parts, or ten times as much as in ordinary air. The results, as compared with those obtained in houses with a normal content of carbon-dioxide, are not very conclusive. Whereas the yield in the "control" houses amounted to 36.2 tons per acre, the yields in houses with excess of carbon-dioxide were not very much higher. The house supplied with ninety parts in ten thousand yielded 38.23, that containing sixty parts gave 37.4 tons, and the house with thirty parts in ten thousand yielded 41.19. The investigators, however, point out that the experiment was made late in the year. This in itself, if sunlight were deficient, might account for the relatively small increase in yield, for no excess of carbon-dioxide can be used effectively by the plant if the radiant energy which the green plant uses in its photosynthic work is deficient. A curious ill-effect on the roots was observed in houses containing large quantities of carbon-dioxide. Whereas the number of diseased roots was relatively low in the normal houses (13 to 14 per cent.) it rose to as much as sixty or seventy per cent. in the houses containing large quantities of carbon-dioxide. In view of these observations it would be interesting to know whether steps were taken to ventilate the houses with fresh air after the day's work was done. For there are facts on record which indicate that excess of carbon-dioxide in the soil has a poisonous effect on the roots of plants. From what is known of the behaviour of plants, it would be worth while for the investigators to try the effect of supplying the excess of carbon-dioxide in the early hours of each day—say from sunrise to early afternoon, and this because there is ground for believing that plants are organisms of early habits, beginning work with the sun and ceasing in the early afternoon. Their manufacturing activity would appear to be confined within the limits of an eight-hours day. To give them supplies of raw material when they cannot assimilate them may be useless, and if the raw material be, as we have suggested, toxic; its continuous presence in excess may defeat the object to secure which these interesting experiments have been designed.

Our Supplementary Plate.—The supplementary plate accompanying this issue depicts the Terrace Walk in the gardens at Warren House, Kingston Hill, an account of which is given on p. 131.

Napthalene as a Fumigant for Indoor Pests.—Mr. Edward R. Speyer, of the Experimental and Research Station, Cheshunt, states, in *Nature*, of August 9, that napthalene will destroy red spider, including the eggs; woodlice, and crickets in glasshouses. Commercial white flaked napthalene was divided so as to pass through sieves of various meshes. When passed through a sieve of sixteen meshes to the inch, all stages of the red spider mite, Tetranychus telarius, including the eggs, were killed in Cucumber houses within about twenty-four hours, when the soil surface was at or above a temperature of 24°C. The amount of napthalene was 3 lb. to every 100 feet of bed. The experiments showed that when the napthalene is divided too finely it volatilises too quickly and the large concentration of vapour resulting did not remain long enough in the atmosphere to kill all the mites. It is advisable to see that the plants are well watered before the fumigant is introduced, as plants lacking water were often considerably scorched, although not permanently injured. Where such fruits as Cucumbers are grown in houses, the fumigant is liable to cause them to taste slightly of the naphthalene, therefore they should not be cut until the odour of the chemical has disappeared from the houses. By admitting plenty of fresh air, however, the taste soon leaves the Cucumbers.

The Banana Industry of Jamaica.—The number of stems of Bananas harvested in Jamaica during 1923 reached the surprising total of 12,455,310. Whilst this is not the largest crop on record, it has only been exceeded once in the previous year, but the value is out of all proportion to anything in the history of Banana cultivation in the island, for the value of each stem averaged 3/6d., as compared with an average of 1/8d. for the past twenty-two years. Thus, in the case of this commodity, contrary to what might be expected, a largely increased output has been followed by a remarkable rise in value, the total worth of the 1923 crop being £2,265,309. According to the *Annual Report of the Department of Agriculture of Jamaica*, a large amount of the profit of the Banana growers during the past two years has been expended in extending their cultivations and enlarging their transport and machinery. It is computed that the output of Bananas in 1924, provided the weather is favourable, will be over 15,000,000 stems. The growers have experienced much trouble with a complaint known as Panama Disease, but a new Banana brought from Guatemala, which is said to be very similar to the Jamaica Banana in appearance, has proved immune to this trouble.

Tomato-Growing under Glass.—A handy little book on the cultivation of Tomatos under Glass* is sent us by the Lockwood Press. The author, Mr. W. Dyke, has written several other useful works on horticulture and in the present volume he deals solely with the commercial cultivation of Tomatos under glass, as practised in the Lea Valley District. The Tomato industry in this country has made enormous strides in the past few years and gives employment to vast numbers of workers. A very high degree of skill is necessary to maintain the output in commercial houses for, after a time, a gradual decrease in the crop results and it is mainly for the purpose of showing how to overcome this falling off that Mr. Dyke has written his book. He deals with the subject under various chapters including varieties, propagation, Tomatos in pots, feeding pot plants, spring work in Tomato houses, summer work in Tomato houses, autumn work in Tomato houses, winter work in Tomato houses, fertilisers and feeding, marketing, fungoid diseases, insect pests, soil sterilisation, and soil analysis. His remarks on the setting of the earliest trusses are of interest and his statement that in dry, sunny weather damping the plants overhead produces an almost perfect setting of the lower trusses is interesting, but he is careful to point out that this must be done only on dry days and at a time in the day when the conditions are favourable. He also states that the temperature has a considerable influence on the setting of Tomato fruits, a high and a low temperature both being very bad and that a very high temperature will stop setting altogether. The best temperature for setting appears to be one ranging from 65° to 70°. Drought at the roots is also a contributory cause of the fruits failing to set and rank growth is also inimical to a good set. The greatest advantage of tapping the rods is, in the author's opinion, the shaking off of the dying petals to allow the style to be exposed freely. With regard to the much debated question of cutting off some of the foliage Mr. Dyke considers that it is beneficial when the plants are growing very strongly with a tendency to rankness, as it gives a check to growth, thus introducing a more fruitful condition, but he wisely observes that this operation should be carried out with judgment and care. The author deals very fully with diseases and their remedies; the hard yellow patches at the base of the fruit, described as "waxy patch" he considers partly due to the absence of sufficient direct sunlight, but its chief cause, as has long been suspected, is due to an absence of available potash in the soil in which the plants are growing, and Mr. Dyke considers that a deficiency of available nitrogen may have a minor effect in the same direction. It is noticed that the fruits in newly erected Tomato houses often show "waxy patch" when those growing in other houses where Tomatos have been cultivated over several years are free from the defect, notwithstanding that the soil in both lots of houses may have received the same amount of potash. This is because only a very small amount of that particular plant food is available in new soil the first year. It has been definitely determined that parasitic organisms are not concerned with "waxy patch."

---

* Nursery and Market Garden Industries' Development Society. *Ninth Annual Report*, 1923.

* *The A.B.C. of Tomato Culture under Glass.* By W. Dyke. The Lockwood Press, 1, Mitre Court, Fleet Street, E.C. 4. Price 3/6 net.

Increasing the Potato Yield.—*The Scientific American* of August contains an interesting note on "Increasing the Potato Yield," by a process of dipping cut seed-tubers in a solution of nitrate of soda. Professor J. T. Rosa, of The University of California, who is responsible for the experiments, has found that when the tubers are steeped for thirty minutes to an hour in the solution, made by dissolving three-and-a-half pounds of common grade nitrate of soda in ten gallons of water the Potatos so treated came up quickly and gave practically a 100 per cent. stand, while untreated seed came up much more slowly and did not show a full stand until three weeks later. The treated crop as a consequence matured much earlier, and Professor Rose is of the opinion that the new treatment will enable growers to thus get the benefiit of higher prices than usually prevail for early Potatos. The treatment should be performed just prior to the sets being planted.

Insect Pests of Cruciferous Crops.—The Kirton Agricultural Institute, Lincolnshire, has recently issued a very instructive booklet entitled *Insect Pests of Cruciferous Crops.* The publication is written by Mr. Herbert W. Miles, B.Sc., the biologist at Kirton, and the articles have been reprinted from *The Journal of the Bath and West and Southern Counties Society,* Fifth Series, Vol. XVIII, 1923–24. The pests are classified according to the particular part of the plant they attack, whether root, stem, leaves, flowers, or seed vessels, and the Wireworm, the Turnip Mud Beetle, Flea Beetles, the Mustard Beetles, the Cabbage Butterflies and Cabbage Root Fly are a few of the insects which receive very thorough attention from the author. The life history of each pest is clearly given and up-to-date control measures, where known, are incorporated. The pamphlet runs into thirty-nine pages of text and is freely illustrated by drawings and photographs. The price of the publication is one shilling net.

Schedule Revision.—Trouble arises on frequent occasions at flower shows simply because of the ambiguous rendering of regulations or the faulty nature of class specifications. "Kind" and "variety" are often used the one for the other with disastrous results to exhibitors when a judge persists in following the letter of the law, as per schedule, instead of "what the Committee intended." Whether show schedules will ever be published without errors is open to doubt, but show committees have now an opportunity of obtaining assistance from Mr. Horace J. Wright, whose novel advertisement appears in the present issue. Mr. Wright certainly has a wide experience of schedule regulations and specifications through his former connection with the Surrey County Council, the Co-operative shows at the Crystal Palace, the National Sweet Pea Society and other associations.

Mr. W. Stephens.—Although Mr. W. Stephens has not come prominently before the horticultural public until recently, he has, nevertheless, been a keen amateur gardener for a very long period. For thirty-five years he held an important position on the Local Government Board (now the Ministry of Health) and the Board of Education, and during a considerable part of that time he cultivated Dahlias, Roses, Carnations and herbaceous plants with great success in a garden at Isleworth, where he then resided. With regard to Dahlias, he has also been a fairly successful exhibitor and this, with his wide knowledge of Dahlias, has doubtless led to his being appointed a member of the Royal Horticultural Society's Floral Committee. Since his retirement from business and his recovery from illness, Mr. Stephens has taken a keen interest in the management of the National Dahlia Society; so much so indeed that on the retirement of Mr. Bartlett, he was appointed to the position of Hon. Secretary. This is exactly the kind of position that a man of leisure, with horticultural interests, might occupy with advantage to himself and to the society concerned and as Mr. Stephens believes that the Dahlia has a very great future before it in this country it is quite certain that he will continue, as he is doing, to put forth his very best efforts to raise enthusiasm for Dahlia cultivation and to raise the National Dahlia Society into that position which it ought to occupy in the floricultural world. It may be pointed out that Mr. Stephens was at one time treasurer of the London Dahlia Society, which is now amalgamated with the National Dahlia Society. He also has a great reverence for the memories of the late Mr. Richard Dean and the late Mr. George Gordon, both of whom were Dahlia experts and took a very keen interest in his earliest efforts to cultivate Dahlias and were frequent visitors to his garden. Mr. Stephens now resides at The Limes, Elers Road, Ealing, W. 13, and will be very pleased to answer any enquiries concerning membership of the National Dahlia Society.

MR. W. STEPHENS.

A Hardy Maidenhair Fern.—Dr. Stansfield in the *British Fern Gazette,* Vol. 5, No. 3, states that he has received a plant of Adiantum, identified as A. venustum, Don, which has proved quite hardy in a mid-Gloucestershire garden for the past fifteen years. This Fern was collected in Kashmir and is said to be much hardier than A. Capillus-Veneris and probably also as hardy as A. pedatum, although an evergreen species It is described as an elegant Fern with wiry stems and a rhizomatous habit.

Strike at Covent Garden Market.—Following a demand for a minimum wage of £4 5s. 0d. per week, together with an increase in the porterage schedule, which the employers refused to accede to, the porters of Covent Garden struck work on Thursday, the 14th inst. Efforts were made to prevent the strike by representatives of the employers and of the Transport and General Workers' Union, and these bodies met on Tuesday the 12th inst., to discuss the claims, but they failed to come to an agreement. Subsequent meetings were held between representatives of the employers and the men without success, and on Thursday morning, the 14th inst., the negotiations broke down. The leaders of the Union then threatened to instruct dockers not to handle produce consigned to Covent Garden, and this took effect on Monday last. Much inconvenience has been experienced, and although the railway men were not involved in the dispute many railway carters were persuaded by pickets to take back to the railway stations consignments for Covent Garden Market. One outcome of the strike was the refusal of the employers to pay wages for work done earlier in the week of the strike, on the contention that the men had illegally dismissed themselves. So far the flower market has not been affected seriously by the strike but in the fruit and vegetable markets the handling of heavy goods has occasioned considerable difficulties.

Poison Bait for Woodlice.—A poison bait which is effective in destroying Woodlice is recommended in the *Ninth Annual Report* of the Nursery and Market Garden Industries Development Society. It consists of Oatmeal, 50 parts, potassium bichromate, 1 part, glucose, 2 parts, and water, 30 parts. The potassium bichromate should be dissolved in water before being added to the other ingredients. Of "traps" which attract woodlice, red Beet and Mangold are the best. Roots cut in halves and placed cut surface on the ground between growing plants afford a ready means of collecting the pests.

Hops.—The acreage under Hops this year exceeds that of 1923, but is smaller than that of 1922, the figures being 26,010 acres, 1924; 24,890 acres, 1923; and 26,450 acres, 1922. More Hops are grown in Kent than in all the other Hop-growing counties, the total acreage this year in Kent being 16,080. The next largest acreage is in Herefordshire, with 4,100 acres; Sussex, 2,390 acres; Worcester, 2,080 acres, and Hants, 1,040 acres.

Appointments for the Ensuing Week.—Tuesday, August 26: Royal Horticultural Society's Committees meet; Newcastle and District Horticultural Society's lecture. Wednesday, August 27: Southport Floral Fete (3 days). Thursday, August 28:—Dundee Floral Fete (3 days); Sandy Flower show; Royal Botanic Society's meeting. Saturday, August 30: Moston Horticultural Society's show; Alexandria Flower show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*The Chapel Oak of Allouville, Chêne-Chapelle d'Allouville.*—The Chapel Oak is unquestionably the senior of the Oaks of Normandy. This tree stands in the cemetery of the Commune d'Allouville-Bellefosse, near Yvetot. In 1843, at the height of five feet four inches from the ground, its circumference was twenty-eight feet four inches. Its trunk, completely hollow, has been formed into a chapel, seven feet seven inches in diameter, and nicely wainscoted. A grated door secures the entrance of this small temple. Above the chapel there is a small chamber containing a bed; the ascent to this chamber is by means of a winding staircase on the outside of the trunk. The top has been broken off many years; where the trunk now terminates it has the diameter of a very large tree. It is slated and covered in with a conical roof, surmounted by an iron cross, rising up in a picturesque manner from the midst of the foliage. The crevices which various parts of the tree present are covered in with slate; and this, by replacing the bark, contributes to the preservation of the tree. The following inscription is over the door of the chapel:—"Érigée par l'Abbé de Detroit, Curé d'Allouville, en l'anne, 1696." And above the door of the upper chamber:—"à Notre-Dame-de-la-Paix." The tree has probably become hollow after losing its top; for, if this happened at a period of the season when the flow of sap was in great activity, all the wood then formed would be rendered liable to premature decay, in consequence of the sudden check. It may be presumed the top has been broken off nearly, or quite, 200 years; for it appears from the above date that the cavity has been so extensive as to admit of the chapel being formed 153 years ago. Yet the tree still continues to deposit fresh layers of wood; for, in 1821, it measured twenty-seven feet seven inches in circumference, and, in 1843, at exactly the same height, it measured twenty-eight feet four inches. The calculated age of this Oak is 870 years. *Gard. Chron., August* 25, 1849.

Publications Received. — *Etablissements et Laboratoires Georges Truffaut, Versailles*, 1824-1924. Centenaire de la fondation du premier Etablissement Truffaut à Versailles, 1824. *Catalogue and Guide to the Exhibit of the Colony of Southern Rhodesia.* British Empire Exhibition, Wembley. Price 3d. *The Roses of Britain.* By Lt.-Col. A. H. Wolley-Dod. Taylor and Francis, Red Lion Court, Fleet Street, E.C.4. Price 5s. net.

BULB GARDEN.

HYACINTHS FOR BEDS IN A FORMAL GARDEN.

Among spring flowering plants there would be no difficulty in choosing kinds more graceful in habit, and far and away more decorative as cut flowers for the home, but there is no kind that can surpass the Hyacinth for massive splendour, either grown out-of-doors or grouped in pans or ornamental bowls under glass. Like most other families of flowers, Hyacinths produce quite good results when mixed, but where several beds or groups are required a more distinct effect is obtained by planting one colour in each bed. Its symmetry and stiff outline make the Hyacinth particularly well fitted for the formal garden (Fig. 41) or other similar enclosure *C. Turner.*

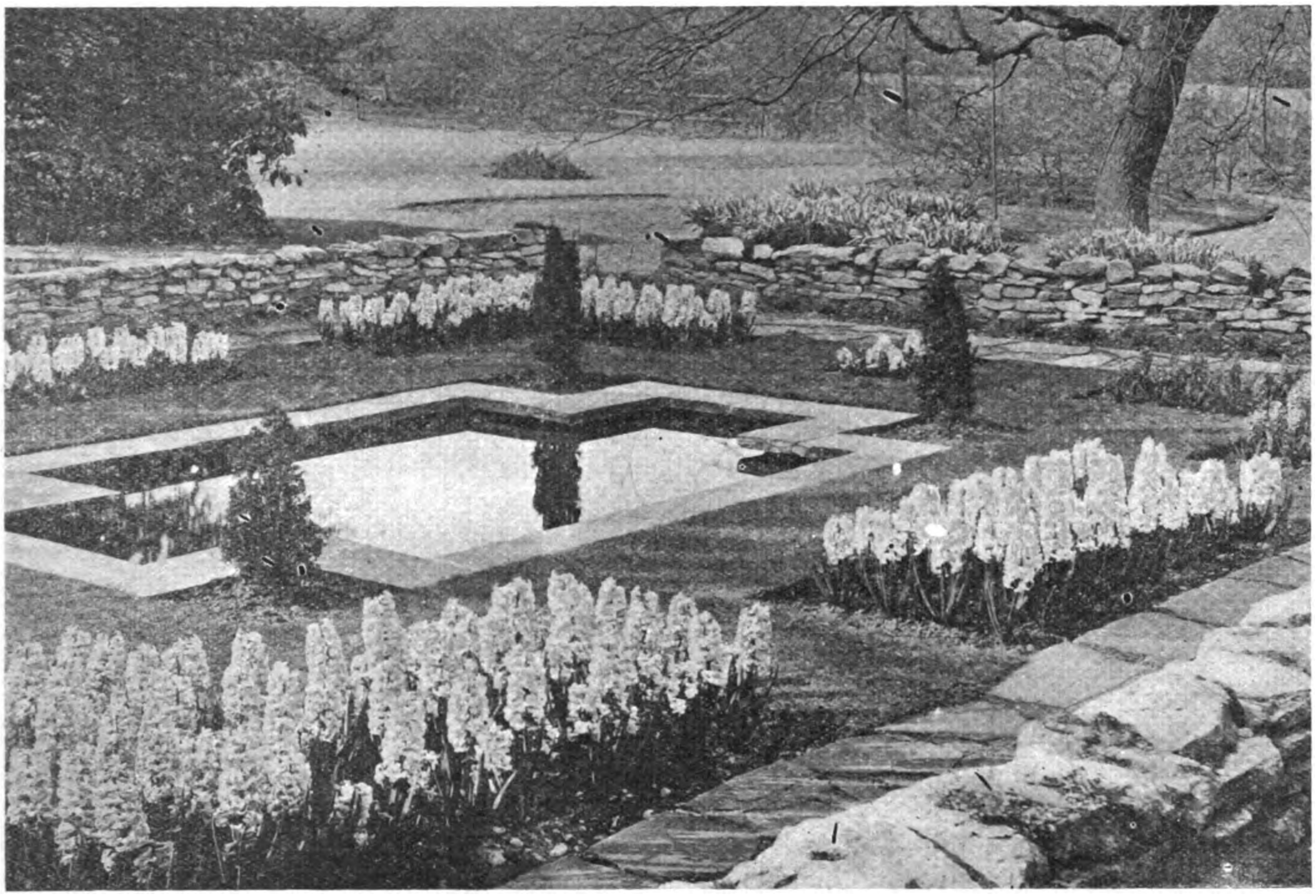


FIG. 41.—HYACINTHS IN A FORMAL GARDEN.

PINK AND ROSE-COLOURED TULIPS.

As a guide for those who would wish to make a speciality of pink and rose-coloured Tulips, I would recommend among the first early varieties Pink Beauty—a variety which may always be effectively employed in conjunction with its parent, White Beauty, from which it sported. There are not many true self-pink varieties, and Pink Beauty has its Cherry-rose petals striped with white about the centre. The flower is of superb shape, the stem is strong and it is one of the most desirable of deep pink shades for bedding. To get it to perfection under glass it must be forced hard. The popular La Reine has given one or two good sports; first there is Rose La Reine; it is a very fine Tulip and the flowers, although not very large, are a much deeper pink than La Reine. The variety is also known as Le Cerisier and it is a splendid flower for early forcing. Another sport from La Reine is Prosperity, delicate rose-pink, with flowers of medium size and useful for early forcing. Flamingo is splendid either for bedding or forcing, and, like White Hawk, from which it sported, it is a large, crinkled flower of good shape. The colour is carmine-rose, striped with white.

A very interesting novelty is Diadem, of a colour resembling the well-known Darwin Tulip Clara Butt. It forces much better than that variety and the stem is tall and the flower of good size. One of the prettiest Tulips of this section is Admiral Reyniers, a beautifully long, large flower of handsome form, and undoubtedly one of the best of the striped, early Tulips. It has a white ground, striped and feathered with carmine-rose and a white base. Rose Gris de Lin is a very fine bedding Tulip, pale rose and white, and Augusta is slightly superior, the flowers being larger. Ibis is comparatively new—another La Reine sport—but has flowers twice the size. The colour is deep, brilliant pink. As a bedding variety it is very fine and it forces easily needing to be grown quickly to obtain it at its best. Rose Luisante, deep rose, is one of the most popular varieties for growing under glass and its strong stem holds its large flower well. It is impatient of quick forcing and is best employed for the second batch. Proserpine is an old variety, but still in great demand, owing to the fact that it forces easily and may be obtained in flower at Christmas or early in the new year. It has a rich, silky, carmine-rose flower and the large globular bloom is sweetly scented. This variety also is a good bedder.

Amongst double-flowered early varieties none, in my opinion, supersedes Annie. It is even better than Peach Blossom and is the best of all the pink Tulips of this section. The colour is good and comes deeper than any other pink Tulip when forced. The flower is compact and it does not open too widely—a fault with many of the double flowers. Peach Blossom, as already mentioned, is also of excellent merit. The popular Murillo is of much lighter shade and is grown by the million for the market. It forces well, and a mass in a bed always provides a pleasing picture. Salvator Rosa is another fine rose-coloured flower and one of the leading varieties for forcing. When forced late, however, it loses some of its brightness and tends to come very weak-stemmed. Lucretia, another fine double pink, is worthy of a place in the selection, but it requires to be grown well to get good blooms under glass. I have never been able to obtain it to my liking, yet many of the market growers send marvellous blooms to Covent Garden. Anna Roozen is also a first-class deep pink flower.

Pink and rose Cottage Tulips form but a small section and may be dismissed in a few lines, for the Darwin class eclipses them. Le Rève (syn. Hobbema) is of a delightful old rose colour shaded with buff and the globular flowers are carried on strong stems. Out-of-doors the colouring is magnificent and if it is to be grown under glass it should be grown late, otherwise the colour will come very pale. Inglescombe Pink is of a soft rose shade and the colour changes to pink when the flower ages. It is equally good for bedding and for late forcing.

In the Darwin class, Clara Butt is undoubtedly the most popular variety. It is not a true pink, as it is flushed with salmon; its cheapness places it within reach of everyone, for it is one of the most prolific Tulips grown. I would not class it as an ideal forcer, for the stems come very weak and top heavy, and once twisted and turned it is impossible to get the stem rigid again. This difficulty may be overcome in a small degree by potting the bulbs after Christmas and growing them as coolly as possible. Out-of-doors it is very charming and its sickly colour a day or two before the flowers open develops into a pretty shade of pink. Princess Elizabeth may be considered an improvement on Clara Butt and the colour is of the deepest pink. The stem is strong and it is far better for forcing than the foregoing variety. Baronne de la Tonnaye is one of the strongest and most satisfactory Tulips I know; the colour is bright rose, margined blush, and Mme. Krelage is another of similar colour, flowering a few days earlier. Loveliness is another very lovely, soft rose-pink variety which does not grow very tall, while Le Notre, Psyche, Queen Mary, Sophrosyne, Yolande, Edmée and Antony Roozen are a few others all worthy of inclusion in the list. *R. K.*

CHIONODOXA LUCILIAE.

This charming, early spring-flowering bulbous plant deserves far more attention than is accorded to it in most gardens. The bulbs should be planted as early as they can be obtained, and the best way to display the full beauty of the flowers is to dispose the plants in good clumps or masses.

Broad patches are delightful among rockwork or in borders of mixed plants, but the plant is lovelier still rising out of the grass in close proximity to trees, where it will not be overshaded. Well may it be termed the "Glory of the Snow," for it is indeed delightful when in flower and the ground is covered with snow. It is not injured by severe frosts, even when in full bloom.

It has been recommended for pot culture indoors, but, judging from experience, it will never become popular for this purpose. It appears naturally, even outside, to flower rather irregularly, and this failing is even more marked when grown in pots. From its earliness one might conclude that it would prove equally as serviceable for decoration in pots as Scilla sibirica. but this is not the case, as the slowest system of forcing proves detrimental. Even under cool frame treatment in pots, as I grew it last year, it was unsatisfactory, while bulbs in the open flowered profusely. *James A. Paice, Sunnyfields Gardens, Mill Hill.*

THE BRITISH PTERIDOLOGICAL SOCIETY.

The only thing about this Society which does not attract is the name. Its very interesting magazine appears as the *British Fern Gazette*. When the Society assumes a similarly simple title, an important step will be taken towards the popularity which it certainly deserves.*

The outstanding features of the Society are *The Gazette* and the annual meetings. *The Gazette*, which was founded by the late C. T. Druery, F.L.S., V.M.H., is now edited by Dr. F. W. Stansfield, the chief living authority on British Ferns. For full, varied and accurate information on every aspect of this fascinating subject, it stands unrivalled; complete sets are becoming a valuable possession.

The annual meetings prove an inexhaustible source of pleasure to those who attend. Places where Ferns abound are chosen, as Kendal, Llanberis, and the Mourne Mountains. This year the choice fell on Axminster, where the rich Devonshire lanes promised good hunting in abundance. Routine business at the August meeting occupied but little time. Mr. W. B. Cranfield was re-elected president; accounts showing a favourable balance were presented, and various committee and officers were appointed for the coming year.

Specially interesting and valuable, not only to members but to the Fern world in general, is the exhibition at these meetings of fronds brought or sent by members. With care and deliberation each frond is passed from hand to hand; strong points are noted, and weaknesses exposed. When real advance is manifest, Certificates of Merit are awarded, which probably constitute the highest honour to which a Fern can attain.

Before and after the meeting a series of excursions is arranged. Those who elect to take part find themselves brought in the most convenient ways—train, motor, omnibus—to centres where Ferns abound. Strolls through beautiful scenes, picnic lunches, and above all, ideal companionship, make up days whose memories are imperishable. Among the treasured traditions of the Society none is stronger than the spirit of generous good fellowship which rules; all the accumulated wealth of Fern lore is at the disposal of the members; when a good "find" is made, the pleasure of the finder becomes common property; jealousies and rivalries do not exist.

Of the discoveries made near Axminster perhaps the best was a crested Polystichum angulare, found by Mr. T. E. Henwood. So thorough is the cresting that it seems possible that the specimens may become percristate. Of lesser finds there were many; and long days of profit and delight were spent exploring the Ferny dells of Devon.

Among the many advantages which the Society can claim, not the least is the possession of a moble honorary secretary in Mr. Charles Henwood, whose exertions for the comfort and entertainment of the members are as untiring as they are successful. *H. Kingsmill Moore.*

RHODODENDRONS.

Cultivation.

(*Continued from p.* 116).

The successful cultivation of an exotic genus like Rhododendron depends in the first instance on a grasp of the conditions under which the plants live in nature. Further, that knowledge requires intelligent application. Here exerience comes in. Since Rhododendrons are found under wide a variety of conditions there is scope for selecting to begin with only those which enjoy a climate approximating to what they may expect in Great Britain and Ireland. Naturally therefore we shun Indo-Malaya and look with a prejudiced eye on Sino-Himalaya; even Yunnan is suspect. Central and North-west China, Japan, North America and Europe will furnish us with plenty of good material; though we cannot entirely ignore the claims of Yunnan and the Burma frontier, any more than we can dispense with the Sikkim Himalaya, since many of the finest species come from these parts. Certain broad principles may be laid down for all species. In the first place, Rhododendrons being woody plants require plenty of water, especially during their growing season. Many species need water all the year round, and consequently are not quite hardy all over England. Not only do Rhododendrons need water—they need more water than most plants of the same size; they are hearty drinkers. Drought during the growing season is fatal; and drought here implies inability to take up water, whether because the soil is too dry, or too cold, or too sour. In England, Rhododendrons need to be watered in summer. Those species (and they include the majority) which cannot get water during the winter, have many of the characteristics of xerophytes; that is, they are so constituted as to be able to withstand long periods of drought, in this case due to cold. They hibernate. This is necessary, because they are evergreen. The Azaleas, being deciduous, are not concerned with these tricks. Rhododendrons have leathery leaves. The alpine and sub-alpine species roll their leaves into tubes and droop them; by this means they not only check transpiration, but easily rid themselves of accumulated snow. The moorland species hibernate by tucking in their small leaves which curl up and hug the twigs. Further, the under leaf surface of most alpine species is covered with hairs, scales or with a secretion of wax—in short, with some protective layer which checks transpiration; it also shields the leaf against radiation from the snow.*

In the sub-tropical and temperate rain forest, these features are either lacking or only feebly developed. Thus drought during the resting period is guarded against. But there is no remedy for drought during the vegetative season in nature; and millions of plants are killed bys pring drought in China. In Great Britain and Ireland a mild March brews trouble. The plants are coaxed into early leaf. Then comes frost. The ground is frozen, the roots cannot function, and the result is death by thirst. In any case the young foliage falls an easy prey to cold winds and frost.

Most Rhododendrons grow in the forest belt. Some of them form forests by themselves, or are the dominant species in the forest. Consequently two important requirements are shade and shelter. Even the moorland species, though without overhead shelter, are chiefly confined to the lee slopes. Moreover, throughout the vegetative season at any rate, they are blanketed by clouds. They exist in a perpetual, cold Turkish bath. However, the majority of species, especially those with which we shall deal, are shaded from direct sunshine and sheltered by wind screens. It is particularly necessary to shelter thoroughly all the big-leaved species belonging to the series 'Grande' and 'Falconeri' and also the woodland species of the 'Lacteum,' 'Thomsoni,' 'Souliei,' 'Campylocarpum,' 'Fortunei,' 'Arboreum' and 'Cinnabarinum' series. Rhododendrons are surface-rooting plants, consequently they do well in copse or spinney, where shade and shelter are afforded by deep rooting trees such as Oak. Thin Pine or Birch woods, such as occur in Surrey, form excellent cover. Trees, like Lime, which give deep shade and, further, are themselves surface rooting, should not be used. This surface-rooting probably accounts for the fact that the only species found growing on clay (in my experience) are those in the rain forests of Indo-Malaya. Here rain falls perpetually; the dry periods are brief and so dark is the forest that the ground is always moist.

---

* Mr. C. Henwood, 21, Clifton Road, Maida Vale, W. 9, will be happy to answer any enquiries from those who wish to join the Society.

* The creeping species of the Forrestii series are exceptional in this respect, but as they are completely buried beneath the snow, the question of radiation scarcely arises.

A dark background shows off the larger and finer Rhododendrons to perfection; the gloomier the better. Fir and Yew and Pine thus perform the double duty of providing good wind breaks and suitable background. Besides ample water and protection from direct sunlight and cold wind, Rhododendrons require good drainage. There are species which grow in bogs—though not in stagnant bogs; but that is not the normal situation. They are mountain plants and the vast majority grow on slopes more or less steep. This is a condition we can rarely provide in this country. And yet it is important. It ensures good drainage (even when the soil itself is heavy) and it introduces a factor to which we perhaps pay too little attention—namely, aspect. Many high alpine species, though not requiring overhead shade, do demand that amount of protection from direct sunlight and from wind, which is guaranteed by a lee slope. In short, slope controls aspect. A tree growing on an extensive plain, even if blanketed to some extent by surrounding trees, faces every point of the compass; growing on a long slope of 45° it faces primarily in one direction only. How important this is may be seen by reference to Rhododendrons in nature where they are extremely sensitive to aspect. On mountain spurs not exceeding 13,000 feet altitude, I have noticed on either side of a north to south pass, immediate and extensive alteration in the species. On one occasion there were on the south side seven species either not found at all, or found very sparingly, on the north slope; and eight species confined to the southern slope. Not only so; at this altitude, the species which were found only on the south slope had, as a general rule, the under leaf surface glabrous; while those restricted to the north slope had the under leaf surface protected by a woolly tomentum, or by a thick crust of scales. There are, of course, exceptions to this rule.

No doubt this contrast increases with altitude and diminishes as we descend. Indeed, on a 14,000 feet pass over the Mekong-Salween divide, I have seen carpets of Rhododendron right to the summit on the north-east flank, and not a single species for a thousand feet down on the south-west side. Snow, of course, lies much longer on north slopes than it does on south slopes, and the hairy coat or scaly crust may be some protection against damage by radiation from the snow, as well as against excessive transpiration. But as regards the complete change of species, it is almost entirely a question of excess and defect of water; for the snow, melting early on the south slope, removes the only source of supply till the rains break. It is evident, therefore, that aspect is taken more seriously by Rhododendrons themselves than it is by us, at least at high altitudes. *F. Kingdon Ward.*

(*To be continued*).

TREES AND SHRUBS.

GREVILLEA ROSMARINIFOLIA.

Hardy in the more favoured districts, this aptly-named Grevillea is well worth some attention: the clusters of coral-red, clawlike flowers are produced freely and are extraordinarily persistent, a plant lasting in beauty for several months.

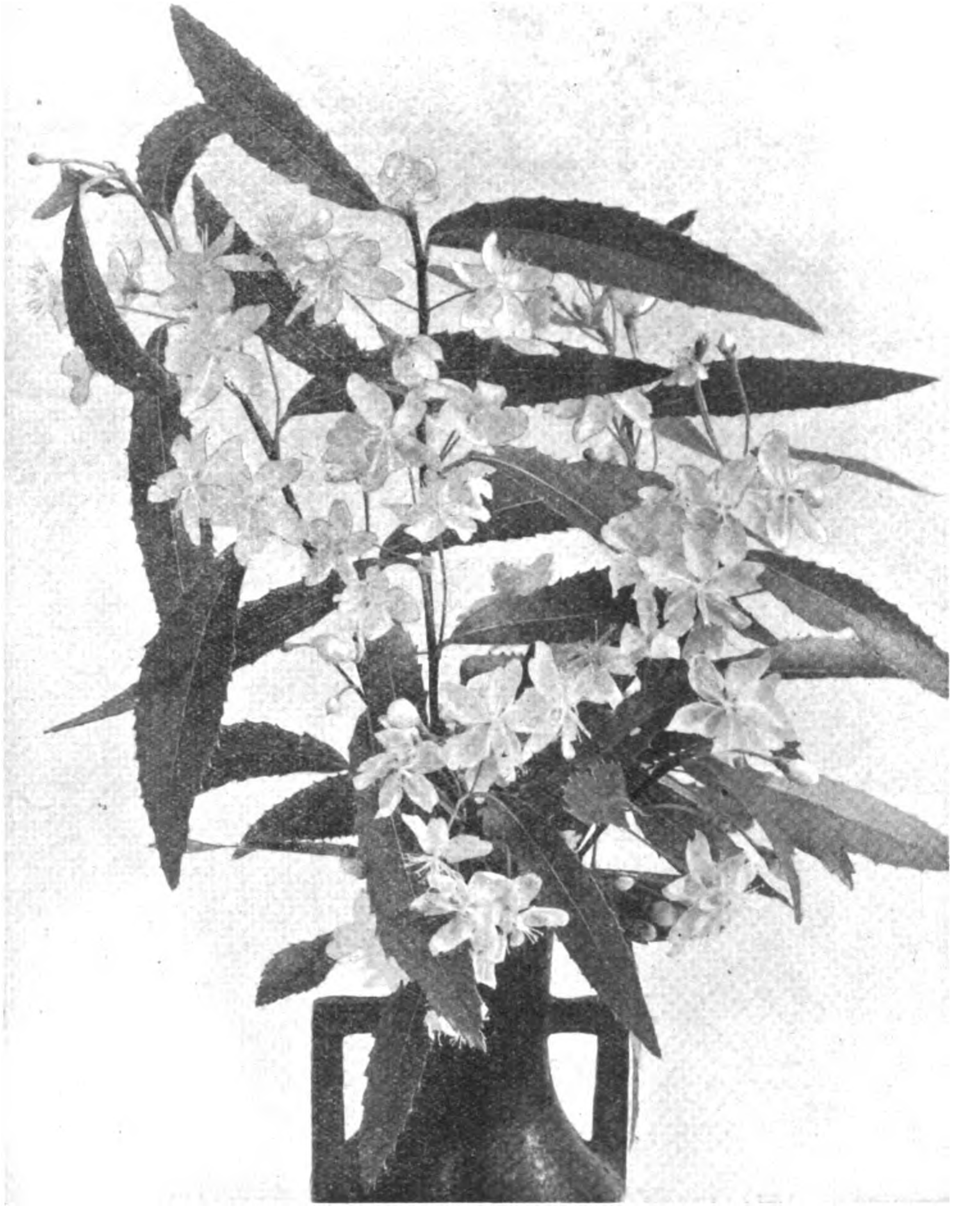


FIG. 42.—HOHERIA POPULNEA LANCEOLATA.

R.H.S. First Class Certificate, August 12 (see p. 119).

G. rosmarinifolia is a delightful shrub for a south wall or for a sheltered border of choice plants and is interesting in or out of flower.

For a cool conservatory or plant house, it is an ideal subject for winter effect and will associate with the majority of other plants.

It may be propagated by means of cuttings made of the young, partially-ripened shoots. A compost of loam and peat is suited to this New Holland plant which was introduced to this country in 1824.

Grevillea sulphurea, which is stated by some authorities to be only a variety of G. juniperina, makes a fine companion plant to G. rosmarinifolia and is said to be one of the hardiest of all the Grevilleas. This species also does splendidly as a wall plant and commences to bloom almost before the winter has departed. *Ralph E. Arnold.*

CORNUS ARNOLDIANA.

Cornus arnoldiana is evidently a natural hybrid between two American species, C. racemosa and C. obliqua. It appeared several years ago in the Arnold Arboretum and is now a large shrub with erect stems and characters intermediate between those of its supposed parents. Flowering a little later than C. racemosa, it was covered with flowers in mid-July. The fruit, which is usually less abundant than the flowers, is white or bluish white. Although interesting to students of plants, as are all natural hybrids, the *Bulletin* of the Arnold Arboretum states that C. arnoldiana is not superior as a garden plant to C. racemosa, except, perhaps, in its greater size.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Miltonias.—The Vexillaria family of Miltonia, which embraces many beautiful hybrids, is the most showy and popular of this genus. Towards the end of August the majority of these Orchids will have started to grow afresh, following a very short period of rest after flowering and the completion of their pseudo-bulbs. Many of the plants will require re-potting, but before this is done it is necessary that each specimen should be examined closely for the presence of small thrips which harbour low down in the new growths. An effectual method of destroying these insects is to dip the plants in a safe insecticide and afterwards in clean, tepid water. Young, vigorous plants should be shifted on into larger pots or pans with as little root disturbance as possible, while exhausted specimens are best broken up and started anew. These plants are rather shallow rooting subjects, therefore only a small amount of compost is needed as the numerous fibrous roots prefer to ramble just over or under the surface. The receptacles should be well drained. The compost may consist of Osmunda-fibre cut up into rather small portions and the dusty particles sifted out, adding a good sprinkling of clean, picked Sphagnum-moss. The potting should be done moderately firmly and the base of the young growth kept about on a level with the rim of the pot. Water should be afforded sparingly until the new growths begin to root freely, merely sprinkling the surface each time the compost becomes dry, but when the plants have become re-established the quantity of water may be increased. During the warm summer months these plants thrive best in the cool house, but when the nights become colder they will do best in a house having an intermediate temperature.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Herbaceous Borders.—It is a good plan to make notes of the successes and failures in the herbaceous borders at the present time, and to draw up a scheme for any intended alterations in planting for another year. It is much easier to do this now while the plants are still growing than to wait until planting time when past defects may not be so vividly impressed on the mind. Early flowering subjects which have passed out of bloom should be encouraged to remain in healthy growth, not only for the appearance of the borders but also to enable the plants to build up strong crowns for next year's flowering. Keep the surface free from weeds and stirred constantly, and give attention to the staking and tying of late flowering plants.

Specimen Plants.—Amongst plants in tubs, Agapanthus umbellatus is carrying large numbers of its beautiful blue flowers on tall spikes and an occasional watering with liquid manure will greatly assist their development. Pelargoniums, Fuchsias, etc., in vases and baskets are also flowering freely and will need copious waterings and an occasional stimulant. Remove all flowers as they fade, and assist the plants to remain healthy and vigorous.

Shrubberies.—Keep the soil clean around flowering trees and shrubs and remove suckers from those subjects which have a tendency to throw them. Straggling or exuberant shoots may be shortened if necessary to preserve the shape of the tree. Newly-planted trees should have their ties examined and if the staking needs making good this should be done before the autumn winds prevail.

Pentstemons.—These beautiful plants, especially those of the small-flowered section are very useful for producing massed colour effects, and although under favourable conditions second-year plants do well, a stock of young plants should be raised annually. Choose strong, healthy, flowerless growths and insert them firmly in prepared soil in a cold frame. The frame should be kept somewhat close and shaded until roots have formed, when the plants may be exposed to full air and sunshine.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Peaches and Nectarines.—All the young wood of these fruit trees should be tied in parallel with the existing last year's growths, to allow the sun and air to reach the fruits; any foliage likely to shade the fruits may be cut off. Birds, and especially blackbirds, sometimes attack these fruits, and to guard against this fish netting should be hung over the trees about a foot or two from the wall. One of the worst pests of Peaches are blowflies. These make a small hole in each fruit, and the latter will not finish properly in consequence. Bottles of sweetened beer will draw them away from the fruits and also trap any wasps that may be present. Attend to the trees in the matter of well watering the roots, as wall trees rarely get sufficient moisture naturally, and renew the mulching if necessary. The trees should be examined almost daily when the fruits commence to ripen, and it is a good plan to spread fish netting or tiffany all along the base of the branches and support it with sticks about two feet from the ground to catch any fruits that may drop.

The Fruit Crops.—Small fruits have been very good this year, doubtless owing to the copious rains which fell in spring and early summer, and we had a fine yield, as our bushes are all young and vigorous. Gooseberries, Red and Black Currants, and Raspberries have all furnished great crops, and the fruits were large and of good flavour. I mention this to show that it pays to keep the garden replenished with healthy young trees and bushes, and above all, to allow them plenty of room to develop and ripen their wood properly. Plums are scarce, only cordon trees of the Czar variety having any quantity of fruit. Damsons, also, are very scarce. Apples and Pears, on the contrary, are very plentiful, and, so far as I can determine at present, will be of good quality. They will need a kindly autumn if they are to become large, as the trees were very late in flowering. The latter have made more summer growth than ever I have known them do before, but it is healthy and of good colour.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Fig Trees in Pots.—Trees that will be required for supplying the earliest fruits next season, should, if necessary, be re-potted, although it is not always desirable to re-pot fruit trees each year. Trees that are planted in tubs may be allowed to remain undisturbed at the roots for several years, provided the drainage is in good order. In cases where re-potting is not considered necessary, remove as much of the surface soil as possible to allow room for the application of a good surface dressing of some rich compost. A suitable compost for Figs consists of a mixture of rich fibrous loam, decomposed horse manure, bone meal, a good sprinkling of old mortar rubble and wood ash. Trees that are potted may be placed in slightly larger receptacles, which should be perfectly clean and well drained. The potting should be done firmly, and care must be taken to see that all the space between the roots and the sides of the pots is well filled with soil, which can only be assured by the use of a thin rammer. After potting them the trees may be placed in a somewhat shady position for a short time, syringed on frequent occasions, and watered with extra care until the roots are active again, when they may be stood in an open position in full exposure to the sun to favour the ripening of the wood as much as possible.

Peaches and Nectarines.—Peaches and Nectarines that are grown in pots for producing early fruits should be re-potted to ensure time for them to develop new roots in readiness for early forcing. If grown in tubs it is not always desirable to re-tub them each year provided the drainage is in good order, but to treat them as already advised for Figs. The first thing to consider is the soil; this should consist mainly of good loam taken from old pasture land, to which should be added some old lime rubble bone meal and wood ash. The compost should be used on the dry side to allow it to be rammed thoroughly. The receptacles should be clean and dry and crocked carefully, and they should be sufficiently large to allow the potting stick to be worked freely between the ball of soil and the pot. If any doubt exists with regard to the ball being dry, the plant should be submerged in a tub of water sometime before potting takes place. In preparing the roots for re-potting remove as much of the old soil as possible by the use of a pointed stick without causing too much injury to the roots. Having prepared them in this way place just sufficient rough material over the crocks so that the ball of soil and roots is about four inches below the rim of the pot. This will allow plenty of room for water and also for applying a top dressing when the trees are in need of assistance to help them to mature their crops. After the trees are potted they may be stood in an open, sheltered position, and provision should be made to ward off heavy rains by placing a slate on each side of the stem of the tree. Spraying with clear water will prove beneficial to the trees on all bright days and greatly assist root action.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Cyclamens.—Seeds of Cyclamens should be sown now or during early September in well-drained pans, filled with a mixture of good loam and leaf-mould with plenty of sand and a little fine-grade oyster shell added. Place the seeds singly and thinly on the surface of the soil, lightly press them in and cover them to about their own depth. Water the pans lightly and place them in an intermediate house. Cover each pan with a pane of glass and a sheet of brown paper until the seeds have germinated. When this has taken place the pans should be placed near to the roof-glass to prevent the seedlings becoming drawn, shading them in bright weather. When large enough the young plants should be pricked off into other pans filled with fresh soil, and be kept growing throughout the winter in a temperature of 50° to 55°.

Re-potting Old Cyclamens.—It is not too late to pot old corms which have been resting after flowering last spring and which it may be desired to grow again. During the flowering season it is well worth while to select a few of the best plants for growing on, and, although it is often said that Cyclamens are not worth growing after two years, nevertheless this is not true, for, provided the plants have been properly treated after flowering, they may be grown with success for several years. It must, however, be understood that this practise is recommended as being worth while only in the case of plants which have proved superior to the rest in point of colour, vigour, or freedom of flowering. There should have been only a partial drying off of the plants and a thorough ripening of the corms. These should be turned out of the old pots, the greater part, but not all, of the old soil shaken from the roots and then shifted into the same sized receptacles, using a compost as recommended in a previous calendar for the final potting of Cyclamens. After potting them place the plants in a cold frame, which should be kept shaded and rather close for a time. The water-pot should be used sparingly for a few weeks, syringing the plants often to encourage new growth. The main batch of plants which were raised from seeds last autumn should by now be growing freely in their flowering pots. Keep a sharp watch for attacks of aphis and red spider. Frequent but light fumigations with XL All Compound will keep the former in check, whilst red spider may be kept at bay by a judicious use of the syringe and soft rain water.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Beetroot.—Beets that were sown in the spring should be lifted, cleaned and placed in sand or ashes in a shaded situation where they will not become dry.

Carrots.—If plenty of frames are available a sowing of an early variety of Carrots made now will give a useful supply of roots at the end of the year. Stump-rooted varieties are the best for this purpose.

Endive.—The plants of previous sowings will be ready for transplanting in ground that has been worked freely. Draw the lines twelve inches apart and allow a distance of twelve inches from plant to plant in the rows. The hoe should be used freely between the plants when they are established.

Marrows.—The plants are growing freely, for the weather of the past fortnight has suited them. The shoots should be spread out to prevent crowding of the growths. When the Marrows are ten inches to one foot long, they should be cut.

Celeriac.—These plants are developing fast and should be watered copiously with liquid manure or some soluble fertiliser. Celeriac does best where the ground is always in a moist condition and receives plenty of sun.

Spring Onions.—Where this crop has been specially cultivated to obtain large specimens, the ground should be kept free from weeds and decayed leaves removed. At a later stage the tops may be bent over. Some growers give them a good twist at the neck before bending them over, but if they are gently bent over this will suffice.

Cabbage.—The ground where Spring Cabbage is to be grown should be dug and enriched with plenty of rotted manure. Have everything in readiness for the planting of the seedlings so soon as they are ready, for they need to be well established in the soil before cold weather sets in.

General Remarks.—The soil about all crops should be stirred with the Dutch hoe and all weeds removed, hand picking them if necessary. A final sowing of Lettuce, Radish and Endive should be made.

HARDY FLOWER BORDER.

ASTILBE SIMPLICIFOLIA HYBRIDA.

The new hybrids derived from the crossing of Spiraea simplicifolia with some other species are coming into flower and promise to be of considerable value where dwarf plants of their character are desired. They received the R.H.S. Award of Merit in 1922 but they have not as yet been much distributed. They are far more robust and of better constitution than the elegant S. simplicifolia and taller in growth. So far as I can learn, only three varieties are at present in commerce, but I may be wrong on this point. As growing here in moderately heavy soil in the border they attain a height of about one foot, and have pleasing foliage of the same character as most of the members of the genus and good spikes of flower.

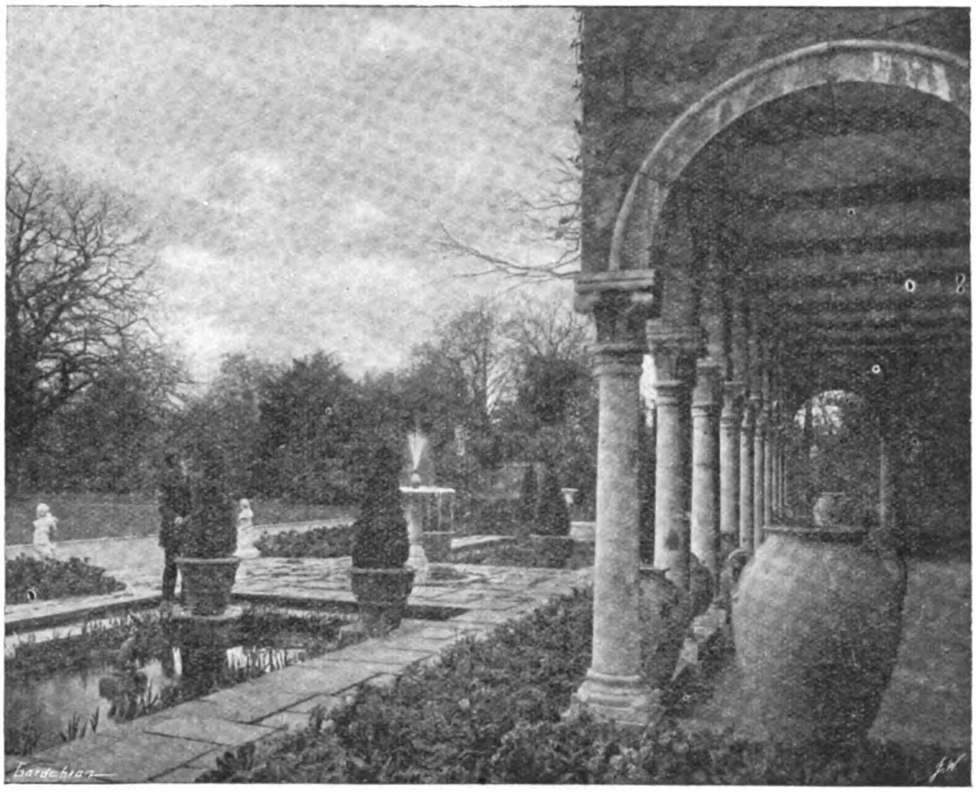


FIG. 43.—WARREN HOUSE: LOGGIA AND FOUNTAIN TERRACE.
(See p. 131.)

The three varieties alluded to are S. simplicifolia hybrida alba, with white flowers. S. s. hybrida carnea, with capital spikes of pleasing flesh-pink blooms; and S. s. hybrida rosea with well laden spikes of drooping sprays of bright pink flowers. All three sorts promise well for the border or rock garden, and they may also become valuable for the margins of Water Lily ponds. They are also said to be suitable for growing in pots. It is not advisable to plant these Astilbes a dry soil.

INULA ROYLEANA.

I was glad to observe Sir Herbert Maxwell's laudatory mention of Inula Royleana, on p. 111. It is, as he remarks, "far the finest of the genus." Next to it should, I consider, be placed some fine forms of I. glandulosa, which originated in the garden of the late Rev. C. Wolley-Dod, at Edge Hall, Malpas. But even these cannot compare in grandeur with I. Royelana. *S. Arnott.*

INTERESTING COMPOSITES.

In the genus Rudbeckia R. speciosa (Newmanii) claims commendation, but in my judgment the two choicest of the family are R. maxima which, despite the epithet, is a plant of much refinement, and R. purpurea (sometimes classed as Echinacea) with softly shaded purple rays grouped round a darker cone. In the usually unattractive family of Cnicus, I am acquainted with but one species deserving a place in a choice collection, namely C. pulcherrimum, which I found in the same nursery as the aforesaid Crepis incana (see p. 111) and have never seen elsewhere. It rears its purple, Thistle-heads on three foot stems from a setting of beautifully sculptured pinnate leaves. The rose-coloured Centaurea rhaponticum, which I brought from the Engadine goodness knows how many years ago, is a meet companion to the golden globes of C. macrocephala; the former requires no staking, but the other is the better for timely support.

There are plenty of other good things among the Composites, but I will name only one other—the South American Mutisia decurrens. It belongs to a genus distinguished from all other Composites as the only one that climbs by tendrils. It carries fine flowers five inches across, the long orange rays being set round a queerly palisaded, maroon-coloured disk. A native of the Chilian Andes, it is perfectly hardy when once established in the open, as may be seen in the Edinburgh Botanic Garden, where it has flourished for many years in a bay of the rock garden. It is, however, a somewhat ticklish customer to get started in the open, young plants from pots being very apt to damp off. Our best plants run ten feet high through Cotoneaster horizontalis on a wall, and make a fine display in autumn. Of upwards of thirty species of Mutisia, we have planted only this and M. ilicifolia, the latter being equally hardy but very inferior in beauty. *Herbert Maxwell, Monreith.*

NOTICES OF BOOKS.

A Note on Rose History.

THERE has just come into my hands a new book bearing the modest title *All about the Rose in Simple Language*, by Sir J. L. Cotter, Bart.* With regard to the cultural matter therein contained I shall leave that subject to the reviewer in the ordinary way, but I do propose, after taking some interest of late in the history of the Rose, to criticise a few of the author's statements on matters of history which appear in this recent contribution to Rose literature.

I have before now deplored the fact that many excellent cultivators of fruit, flowers, and other garden subjects when they put their knowledge into book form seem to regard it as a necessity to have a chapter or two on historical and sometimes literary matter. It seldom happens that a first-class cultivator has the capacity, innate or acquired, to deal satisfactorily with such matters, although he may be well equipped by long years of practical experience in cultivation and also be gifted with the art of conveying instruction in clear and well-chosen language.

Historical and literary research work demand other qualities—often a special training and a knowledge gained in the quietude of the study rather than that acquired in the open air.

The author of this new Rose book, fortunately, seems to have some idea of this as he tells us in Chapter I, "The History of the Rose," that he proposes to sketch very lightly the history of the flower. It is good that he confines his remarks on the subject to three pages only, for there are in those pages quite sufficient errors to make us glad that he did not aspire to deal more liberally with the history of the Rose.

He informs us "The National Rose Society gives 1596 as the date on which it is known that the Centifolia Rose, also the Moss, and Austrian copper and yellow were grown."

He does not tell us where the National Rose Society makes this statement, but if he had taken the pains to verify it by referring to contemporary authorities such as John Gerard's catalogue or his *Herball* he would have found that so far as the Moss Rose is concerned there is no evidence to support such a statement. Later, on p. 18, we are informed that Moss Roses were introduced from Italy to this country about 1735. Sir J. L. Cotter quite ignores the fact that Robert Furber catalogued the Moss Rose in 1724 and figured it in his series of 12 plates of flowers, January to December, in 1730, and included it in his *Short Introduction to Gardening* in 1733. It was also figured and described in the *Catalogus Plantarum*, published by a Society of Gardeners in 1730, pl. No. 18, and again in both editions of *The Flower Garden Display'd*, 1732 and 1734. Furthermore, Phillip Miller in the first edition of his *Gardeners' Dictionary* which appeared in 1731, describes the Moss Rose under No. 14 of the genus Rosa.

The next obvious error is the name of Lach*o*rme, a mere slip perhaps for the famous French raiser Lach*a*rme.

On the same page we learn that in 1829 Monsieur Desportes issued a catalogue of some 2,600 varieties, in which, if Sir J. L. Cotter had consulted it, he would have seen a reference not only to the Moss Rose being grown here in England by Furber but also a note as to its introduction into France some half a century later.

Rose growing at this period (1829), he states, was made very fashionable in France owing to the Empress Eugenie's (sic) great love of the flower, of which she endeavoured to collect all existing varieties for her private garden at Malmaison. We wonder whether this is a mere slip or seriously intended. In 1829 the Empress Eugénie was but three years of age and was not married to Napoleon III till 1853.

It is evident that the author of *All about the Rose* meant the Empress Josephine, who, by-the-by, had then been dead about fifteen years. Every lover of the Rose is more or less aware of Josephine's delight in gardening and of her passion for the Rose. A dainty little book by the great French rosarian, Jules Gravereaux, tells us what has since been done to reconstitute the collection grown by Josephine in her palmy days and before she was cast off by her husband Napoleon the Great.

In Chapter II descriptions and short accounts are given of the different types of Roses. Dates of introduction are also supplied but these appear to be needful of verification if we take at haphazard, Boursault, a very strong family of climbing Roses introduced about 1683. If, as Mr. William Paul states in *The Rose Garden* (9th Ed.), this group was named out of compliment to M. Boursault, the date given must be open to question, for M. Boursault was an eminent French amateur who had a famous garden near Paris less than a century ago.

With regard to the nomenclature, as is usual with many English Rose books, the French names are more or less defective. Accents are sometimes placed over the vowels where needed, sometimes not—on p. 165 and 172 Madame L*a*mbard should be Madame L*o*mbard; Madame Edouard Herrio*tt* should have only one "t"; it is erroneously spelt with two in several places. On p. 169 and 172 we get Madame Jules Graveraux. One would have thought that the name of so great a French rosarian as this lady's husband, Grav*ere*aux, was too well known for such a slip. Gruss *au* Teplitz is wrong throughout; it should be Gruss *an* Teplitz. Madame Georges *Briant* is an error, the surname properly is *Bruant*, that of the famous nurseryman of Poitiers. Commandant Felix Foure should have the surname F*a*ure; Lieut. Chau*se* should be Lieut. Chaur*é*, and even Belle Siebrecht appears on p. 183 as Belle Siebr*a*cht.

It is regrettable that more care is not taken by authors in matters of this sort, but Sir J. L. Cotter has the consolation that he is not the only Rose book author who could be criticised on similar grounds. *C. Harman Payne.*

**All about the Rose in Simple Language.* By Sir J. L. Cotter, Bart., Andrew Melrose, Ltd., London and New York. Price, 6s.

ALPINE GARDEN.

VIOLA GRACILIS LADY CRISP.

A BIG plant of this pretty Viola, growing on a bank in the garden of the Misses Maxwell, Nunbank, Dumfries, attracted my notice recently, among the many beautiful flowers in that charming garden. Of free, yet not ungainly habit, the plant was covered with its pleasing flowers of lavender or lilac, and was most attractive. This class of Violas includes excellent rock plants, and in the various colours now available that of Lady Crisp appears to be one of the most pleasing

PHLOX SUBULATA GAYNOR ADAMS.

IT is many years ago since, on a visit to Kew, I saw the varieties of Phlox subulata or setacea, the Moss Pink of American gardens. At that time the number of sorts in cultivation was but small, although it included such standard varieties as P. s. Vivid, The Bride, atropurpurea and some others. In more recent years the late Mr. T. Smith raised and introduced several beautiful varieties, and still more recently a few other raisers have entered the field.

I have for long been an admirer of this lovely little alpine Phlox, and have always been on the look out for new varieties. Gaynor Adams is one of these, and it promises well. It is a plant of good habit and has wonderfully large, well-formed, bright rose flowers. I am mentioning it now while it is in flower to draw growers' attention to its merits. *S. Arnott.*

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

GLOXINIAS.

THOUGH they are tuberous-rooted perennials Gloxinias may be treated successfully as annuals. Sowing the seed early in January is necessary, however, and as the seeds are very fine they should be sown on the surface of the soil in a well-drained seed-pan and covered with just a sprinkling of sand. The pan should then be covered with a piece of glass and kept shaded until germination takes place. When ready to handle, the young seedlings should be pricked off into pots or pans in a light, rich compost, and later the young plants should be potted singly in thumb pots, still using a light compost.

In their early stages of growth Gloxinias should be grown in a temperature of 60 to 65°, with plenty of atmospheric moisture. As the season advances and they increase in size they should be potted as they require it and gradually accustomed to a lower temperature, that is assuming they are intended for furnishing the greenhouse; if meant for the stove they may be grown in the higher temperature until they come into flower. In their later stages they are best grown in an intermediate temperature for greenhouse decoration. In fact they may be grown in cold frames provided the latter are kept close and warm; this necessitates closing the frame early with plenty of sun heat, and covering it at night to maintain genial warmth.

Gloxinias treated as annuals should be flowered in five-inch pots, and the compost for the final potting should consist of three parts good mellow loam, with some flaky leaf-soil or old Mushroom bed manure and enough sand to render the soil porous. When they have well filled their pots with roots they enjoy liberal feeding with diluted liquid manure and soot water. Guano is also very good for a change.

Gloxinias are very subject to attacks of Begonia mite, but attacks may be prevented or cured by using the sulphur vapouriser.

There are now many beautiful varieties of Gloxinia which come true to colour, consequently most tastes may be suited. The young tubers should, of course, be kept for the following year, as they are valuable for early flowering.

GYPSOPHILA ELEGANS.

This annual Gypsophila, of which there are white, pink and crimson varieties, has long been popular for mixing with other flowers in floral arrangements, their light elegant sprays of small flowers being ideal for this purpose.

Seeds should be sown in cold frames during September and again early in the New Year. Three or four seedlings will suffice for each small sixty-sized pot in which they may be wintered, transferring them to five-inch pots early in the year. Another method is that of potting the seedlings direct into their flowering pots, in which case very careful watering is necessary until they are well established.

In common with all slender-growing plants of this class they should be grown very cool, otherwise they will become weak and weedy. They also require timely and careful support with slender twigs of Hazel, Birch or some such material. *J. Coutts.*

NOTES FROM A WELSH GARDEN.

One of the most beautiful plants of our garden in August is Deinanthe coerulea. A specimen established in a cool bed of leaf-mould in the woodland is carrying on crimson stems several nodding heads of its lovely Anemone-like blossoms. These latter are about one-and-a-half inches across, with round, overlapping petals of a waxen texture and a bold central ring of innumerable stamens. The whole flower has the soft, blue-lavender tint of a Parma Violet. The singular charm and refinement of these blooms appears, moreover, to be emphasised by the somewhat coarse and bristly leafage above which they are held.

Actaea spicata, which prospers in the same bed with the above, is bearing a crop of its jet-black berries (said to be very poisonous), and a tuft of grassy foliage accompanied by tall spires of creamy stars is Zygadenus chloranthus. Here also is a colony of another first-rate plant for a moist soil and half-shade, Lysimachia clethroides. The Snakeroots (Cimicifuga) are raising their white or rosy spikes where the glossy leaves of Galax aphylla are already tinted with crimson, and hard-by, one notes the clear, luminous azure of that all-season bloomer, the pretty Borago laxiflora, and the much deeper, intenser blue of Cynoglossum Wallichii which has yet to prove its reputed perennial nature here.

For a month at least that beautiful shrub, Vaccinium glauco-album, a Himalayan species about two feet tall, has maintained a succession of its creamy-white flowers. But the most notable feature of this species is the foliage, the comparatively large, ovate leaves being a pale emerald-green with undersides of a vivid bluish-white, a colour that also pervades the leafy bracts which envelop the base of the flower racemes. Zenobia speciosa is still bearing a quantity of its drooping waxen bells, and, admirable as it always is, Daboëcia polifolia, has this year excelled itself. The white form is especially good, many of the racemes, which are being yielded in amazing prolificacy, being nine inches long.

Erica stricta, usually much later to bloom with us, was in full flower before the end of July, and the same precocity was noticed in E. ciliaris, the white variety of which is one of the most beautiful of all our native Heaths. E. vagans var. St. Keverne, stands out supreme among all others of its species, and of several of the newer ones in the cinerea set Apple Blossom and pallida promise to be striking acquisitions.

On a dry, warm slope Genista aethnensis, Cytisus nigricans and Spartium junceum are proving themselves very worthy representatives of their race for August flowering. Diplacus glutinosus, which in a well-drained soil is much hardier than is generally supposed, has been full of flower since June and will continue until the first frost. The form with large flowers of an orange-buff to a creamy-nankin tint, which appears to be the common type of the Californian hills, is more robust here than coccinea, which hails from further south. The flowers of this variety and its hybrids range from a deep crimson-maroon to shades of refulgent coppery-orange. Pentstemon cordifoliaus, with tubular blossoms in a dull blood-red might be less attractive were it not for the elegance of its long, slender branches and glossy, dark-green leaves. It is possible that there may be better coloured forms of this shrub, but as we know it, it seems just to fall short of being satisfying. In striking contrast, that glorious Chilian plant, Desfontainea spinosa, is all that one could desire in brilliance of colouring.

Most of the choicer, shrubby Veronicas must even in these gardens be included in the doubtful list when it comes to withstanding a very severe winter. But they are propagated from cuttings and grow so fast that one never need be without a reserve stock. Those of the Andersonii, or speciosa, class are the tenderest grown here, and of the late summer flowering plants they are the most ornamental among the taller kinds. V. Aoira, with narrow leaves and white flowers, is a distinct and elegant species, and of much the same habit and dainty appearance is another which bears the label, V. Eversley Seedling, and has blossoms of bright amethyst. Both of these flower profusely from mid-summer onwards.

Gentiana asclepiadea in white and various shades of blue represents the race in the half-shade of the woodland, whilst in more open spots G. septemfida and G. Lagodechiana are still carrying a heavy crop of blossoms. G. linearis, rising erect to nearly a foot and bearing at the tips of its stems clusters of flowers after the manner of G. septemfida, is sharing a cool bed with the trailing, G. Freyniana which more nearly approaches G. Lagodechiana, though it flowers a good deal later. Nearer the water the Mimuluses are flowering as gaily as ever, their extraordinary floriferousness being a constant source of amazement. Where it can be given plenty of room there is nothing much better among the taller Musks that M. lutea, in its rich Nasturtium-yellow, and some clumps of a form of the same Musk with flowers blotched and margined with a deep crimson scarlet are singularly handsome, rising to over two feet in height at the water's edge. Other very striking varieties are Whitecroft Scarlet and Fireflame of the M. cupreus set, the latter being an even more intensely fiery coppery-scarlet than the former. The brilliant cherry-crimson of the very floriferous, M. Croftonianus, strikes an uncommon note of colour, and the almost pure scarlet of M. cardinalis, always welcome, is especially pleasing in these later days.

In half-shady places, both in woodland and rock garden, the Nemophila-blue flowers of the trailing Geranium Wallichianum, var. E. C. Buxton, are very lovely, but the colour of this form is of such a delicate, fugitive character that the flowers are not seen at their best unless in subdued light. Another fine, clear blue is that of Ceratostigma Wilmottianum, a good sized specimen of this elegant shrub looking particularly attractive in association with Potentilla Farreri and P. Vilmoriniana. A blend of blue (or lavender) and yellow is again seen with admirable effect where a group of Scabiosa caucasica is backed by a mass of Evening Primroses. The latter also look delightful against a wall adorned by the beautiful lavender blossoms of Solanum crispum autumnale, whilst in the open woodland Hypericum patulum Henryi and the pale blue and silvery-grey of Teucrium fruticans suggest another harmonious combination in similar tones.

The yellow Œnotheras also blend very happily with such border plants as have any scarlet in their colouring, notably some of the hybrid and other Pentstemons, Lilium chalcedonicum, Geum Gibson's Scarlet, and Tropaeolum speciosum. But good and beautiful as the whole race is I think the Evening Primrose reaches its highest note in O. caespitosa (marginata). This species has charming, silvery foliage and neat habit, and its enormous pure white, very fragrant blossoms, the largest of the family, are not only singularly chaste and delicate when first opened but they die off in a full toned, satiny shell-pink. *A. T. Johnson, Talycafn, North Wales.*

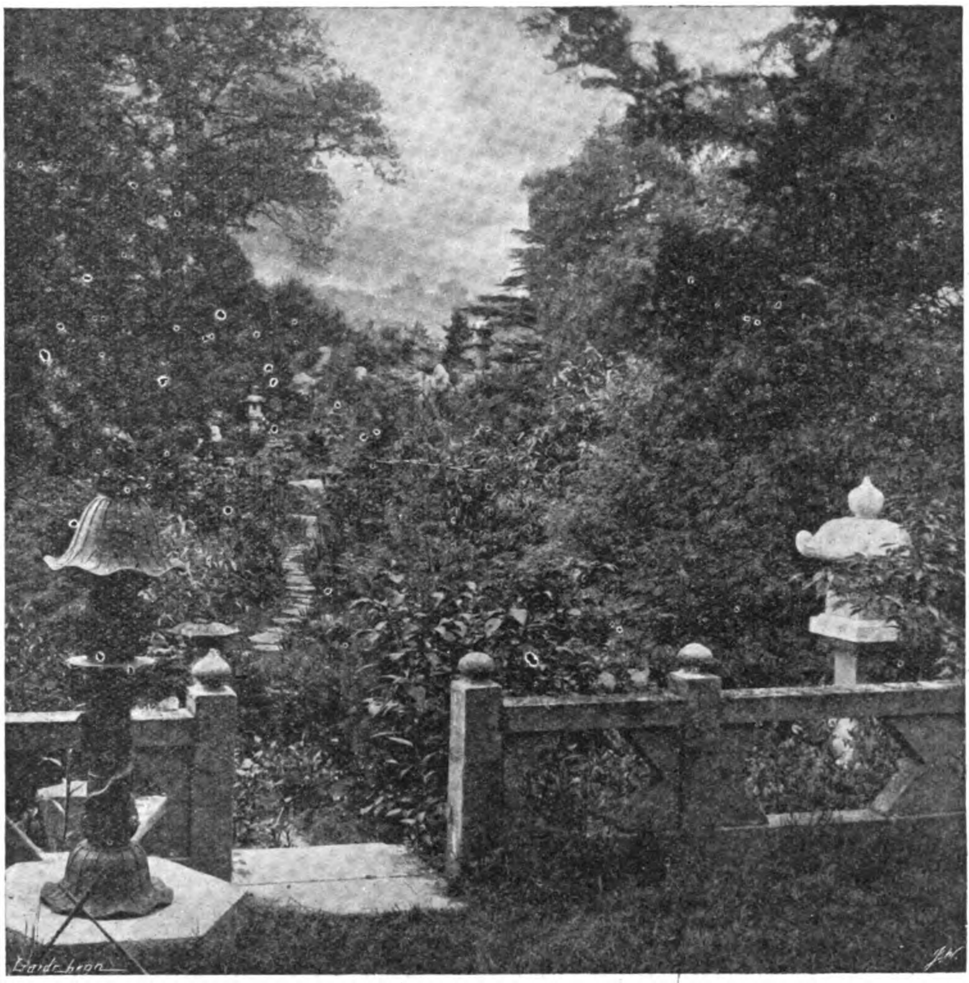


FIG. 44.—WARREN HOUSE: THE JAPANESE GARDEN.

(See p. 131.)

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

GARDEN CRAFT IN THE CANTICLES.—IV.

THE lover exclaims (Canticles VI. 11), "I went down into the garden of Nuts." It is an unique expression, found nowhere else in the Bible, and rarely used in other Eastern works. Indeed Nuts are only mentioned in one other passage of Scripture, and then the word is a totally different one, as we shall presently see. So quaint a phrase is suggestive. Who, but one in luxurious circumstances could own a Nut garden? What kind of Nuts would they be? Were a great variety of Nuts known to the writer, and to the luxury-seeking Oriental of that period? Does the history of the words for Nut employed in the Bible throw any light on a subject which is fascinating alike for its horticultural lore and its antiquarian interest? These are among the points which it is my intention now to propound. I will begin with the phrase Garden of Nuts or Nut Garden (*Ginnath egoz*). The first word (*Ginnath*) is from the Hebrew word *Gan*, "properly a place hedged in or walled around, hence an enclosure, a garden, orchard or park (Gen. II. 8), a pleasure garden or Paradise." With this I dealt in my opening paper. But what of the word for Nuts (*egoz*)? Just as the Hebrews borrowed the word for an orchard, park, or pleasure garden (*Pardes*) from the Persian Paradise, so they may have drawn from the same source the word for Nuts, since a Nut in Persian is named Aghus. As some kinds of Nuts grow in bunches and clusters it was at one time thought that the Hebrew word (*egoz*) came down from *agaz* to bind or to cluster. A fuller knowledge of the languages of the East, however, leads one to look for its origin outside the language spoken by the Jews. Etymology is a trap for unwary feet, and some philologists would have no difficulty in connecting our word Nut, the Latin nux, the Icelandic hnot, and the old German *hnus, nuss*, with the Hebrew *agaz* or *egoz*. I am not equal to such somersaults, but incline to agree with the old Roman and Greek authors in recognizing the word as a borrowed one.

All the evidence which is at our disposal goes to show that the principal reference in the present instance is to the Walnut. With this fact as our clue it will be possible to proceed with a fair amount of certainty to our derivation of the name. To begin with, a Walnut is neither a wall-nut, nor a "walled-nut"—enclosed in walls; but one which comes to us from the foreigner. Our Saxon ancestors used the word *wealh* in the sense of foreign, whence came the name *Wealhas* (variously written in olden times) meaning a foreigner, stranger or one from another country, and so eventually a Welshman or Celt. It was so among the Germans who formerly called a foreigner *Walah*, whence the modern *Wälsch* for one who comes from abroad, a Roman or Italian, and so *wallnuss* or *Wälsche Nuss*, a Walnut. What, then, was the foreign land whence this Nut was introduced? From Pliny's Natural History we learn that it was believed to be Persia. The Romans are known to have cultivated the Walnut from the times of their kings, and like many other races they introduced Nuts into their wedding ceremonies. This is an interesting side-light on our subject.

De Candolle informs us that the Walnut has been found in a wild state in Armenia, "in the district to the south of the Caucasus and of the Caspian Sea, in the mountains of the north and east of India, and in Burmah." Hooker in 1849 went over the district now made famous by the Mount Everest Expedition, and wrote that he "ascended to Yoksun, one of the most curious and picturesque spots in Sikkim, and the last inhabited place towards Kinchinjunga. Mixed with many tropical tree were Walnuts of the common English variety; a tree which, though planted here, is wild near Darjiling, where it bears a small-sized fruit, as hard as a Hickory Nut. Those I gathered in this place were similar, whereas in Bhotan the cultivated Nut is larger, thin-shelled, and the kernel is easily removed." It has been found in a wild state also in Japan and north China, though the Chinese, who call it *Hat-to* or *Hap-to* say that it was introduced from Thibet a century-and-a-half before Christ. Many details respecting it are given by such writers as Helm, De Candolle, Heldreich and others, as wel as by Pliny. Theophrastus, and the early authorities. The tree and the fruit were alike well-known to most ancient peoples, as we learn from the great number of names applied to them. Upon these names Pictet, Hehn, and many others have exercised their ingenuity, and thanks to their researches we can with considerable certainty trace the name employed by the writer of the Canticles. It is not a far cry from the form *egoz* to the Arabic *gauz* and the Aramaic *gauza*, with which we may compare the term *aghuz* found in the dialect of Ghilan, and so eventually pass to the Sanskrit *akhota* or *akhoda*. Reference may be made to the *Encyclopedia Biblica*; also to Cheyne's rendering of Esther I. 5 and VII. 7.

We are not without aids of a biblical character, however, to the study of our subject, and I therefore turn to those other passages in the Hebrew writings which serve to throw light on this study of the garden of Nuts. In the book of Genesis we read (XLIII. 11) that Jacob, when urging his sons to go down a second time into Egypt to buy corn, bade them "take of the best fruits of the land, and carry down a present of a little balm and a little honey, spices and myrrh, Nuts and Almonds." Here the word translated Nuts (*botnim*) is quite different from that in Canticles. It shows, however, that more than one kind of Nut was known in Palestine in early times, and more than one kind would doubtless be cultivated in a garden expressly devoted to Nuts. By common consent the Nuts of Jacob's present were the fruit of the Pistachia, concerning which something must now be said.

The identification rests in the first place on the history and etymology of the Hebrew name, and it is a sign of the confidence which our revisers had in the matter that in the margin of the R.V. they placed the comment on Nuts "that is *pistachio nuts*." In Arabic we find the name *batam* or *butm*, which resembles the Assyrian *butnu*, and may be derived from the Syriac *betmetha* the Terebinth (for which see the note from Tristram), a tree whose native country is Palestine. "The pistachio (states de Candolle) is a shrub belonging to the order Anacardiaceae, and grows naturally in Syria. Boissier found it to the north of Damascus in Anti-Lebanon, and he saw specimens of it brought from Mesopotamia, but he could not be sure that they were found wild. Pliny and Galen knew that the species was a Syrian one." De Candolle thinks the practice of cultivating it even in Palestine was not a very ancient one, but he does not notice the reference in Genesis, or the Canticles, and may not have associated the Pistachio with either of these passages. But we see no reason why it may not have found its place in a royal Nut grove. We are prepared to endorse the opinion of Tristram, who writes as follows:—

"The Pistachio Nut is, doubtless, the fruit here (Gen. XLIII. 11) intended, as is corroborated by its similar Arabic name of *batam*, a well-known product of Syria, the fruit of the Pistachia vera, a tree allied to the Terebinth . . . One or two we saw just outside of Jerusalem, by one of which we pitched our camp; but it was not till we reached Damascus and Beyrout that we found the tree extensively cultivated. I believe I also saw it wild on Mount Gilead. As it is a tree which loves a dry and rocky situation, it was not found in Egypt in patriarchal times, and therefore Jacob's present would be that of a foreign and uncommon luxury. Ancient writers mention it as peculiar to Syria, though this is not strictly correct, as it extends through Persia to Afghanistan. Alleppo is still celebrated for the quality and abundance of its Pistachio Nuts." There is, therefore, no reason why they might not have found a place in the garden of *The Song of Songs*. The crop is often very abundant, frequently growing in bunches of several together close to the main stem. The Nuts are shaped somewhat like the Almond only rounder and more glossy. The kernel is of a bright green colour, while the flavour resembles that of the Walnut." It is generally agreed that in this case the name is Semitic, and was given to the Nut because, as Parkhurst remarks, "the shell was shaped like the belly and contained the kernel."

A garden of Nuts would hardly be regarded as complete in Palestine if it were destitute of Almonds. A consignment of these useful fruits was included with the Pistachio Nuts sent by Jacob into Egypt, and we know that the tree was largely cultivated in Palestine in biblical times, and as one of the native trees is frequently mentioned in the Sacred Writings. The blossoms, which are of a pale pink, are very beautiful, and to-day the Peach and Almond are found growing side by side in the orchards and gardens around Nablus or Shechem. "In early spring it forms a beautiful feature in the landscape there, as the lower slopes of Gerizim as well as the valley are studded with Almonds and Peaches, in lovely contrast with the deep green foliage of the Orange trees, and rivalling an Apple orchard in splendour of colour." The Almond has, perhaps, two names in Hebrew In any case, while *shaked* is the term usually employed, some translators also incline to give the word *luz* the same meaning. But this brings us to another question. If the Walnut, Pistachio and Almond were found in the garden of Nuts, why not the Filbert or one of its near allies? And why not the Chestnut?

We read of Jacob (Genesis XXX. 37) that he "took him rods of green Poplar, and of the Hazel (*luz*) and Chestnut tree," and placed them in the watering troughs from which the flocks drank It is true that in the revised version we have the words differently translated, the Chestnut being replaced by the Plane tree and the Hazel by the Almond, but I am disposed to think Hazel might be retained. The question is largely a philological one, and can only be decided, if at all, after the most careful attention has been given alike to the Semitic and Greek terms, the evidence of history and the testimony of the botanist. The Almond, as we have seen, has elsewhere in Scripture its own peculiar and distinctive name. In favour of the Hazel is the fact that from time immemorial it has been used for purposes of divination, a fact which I have not seen mentioned in this connection. It is of interest to note that the Greeks distinguished the Walnut, the Chestnut, and the Filbert by giving each a qualifying place name. The Walnut was Persic or Persian, the Filbert Pontic, while the Chestnut was Euboean. Tristram found the true Hazel common in the Lebanon and Galilee, though he did not observe it wild in southern or central Palestine. As for the Chestnut, though planted in orchards in Lebanon, it was not seen in Palestine. So long ago as the days of Pliny no fewer than eight varieties of the Chestnut were known to the Romans, so that there is no reason why one or other should not have been grown in a garden of Nuts in the days when Canticles was written.

There is no need to strain our subject, or draw upon the imagination for other kinds of trees. Any orchard which possessed the Walnut and Pistachio, the Almond, Filbert and Chestnut in those days and in that land might be regarded as well-favoured, and the garden-craft implied and required would be of no mean order. *Hilderic Friend.*

WARREN HOUSE, SURREY.

(See Supplementary Plate).

The term warren, designating a place privileged by the crown for the keeping of certain animals, usually those of the chase, is applied to several estates and homesteads, and places bearing the names Warren House, The Warren, etc., are usually of considerable age and importance. Warren House on the top of Kingston Hill, Surrey, the residence of General Sir Arthur Paget, has an association with Cardinal Wolsey, for it is one of the sources of the original water supply at Hampton Court, and the visitor may see in the grounds the spring, enclosed by masonry, from which the supply was obtained.

Kingston Hill, overlooking the Vale of Putney, with Wimbledon Common in the distance and the great park of Richmond on the left, is one of the fairest spots around London. It has retained much of its original sylvan beauty, for although residences have been built on both sides of the wide road that traverses it from Putney to Kingston, nearly all of them have small estates and beautiful gardens attached.

The palm for size and natural beauty, as well as from a garden standpoint, must be given to General Paget's estate; the owner, moreover, is a keen horticulturist and has planted the grounds with a wealth of choice trees, shrubs, and beautiful plants of all kinds. Some of the garden scenes are portrayed in the supplementary plate, which accompanies this issue, and in the illustrations in Figs. 43, 44, 45, and 46. The supplementary plate shows a view of the residence and the loggia on the south-west side, with a broad gravel path separating the house from the lawns and terminatiug in a recess with seats in a wall at either end; on the margin of the lawn are old lead and stone vases, which are planted in summer with Pelargoniums and Abutilons. The loggia (see Fig. 43) is built in the Italian style from stone pillars obtained from Pompeii. This ornate building is covered with climbers, including fine plants of Vitis Thompsonii, and between the columns supporting the structures are old flagons, six of them being wine flagons of great historical worth, handsomely decorated with floral figures.

Immediately in front of the loggia is a paved garden with two octagonal water pools and central fountain. The water pools are planted with Nymphaeas, Trollius and other water-loving plants while eight pyramidal Box trees in terra-cotta receptacles are disposed one on either corner of the pools. The little border that surrounds this flagged garden is gay in summer time with such subjects as Paul Crampel Pelargoniums, Abutilons, Zea Mays, etc., with Dactylis glomerata as an edging. On the chief lawn, of which the south-west corner is seen in the picture showing the loggia, are several trees planted by royal personages, including two Cedars planted by King Edward VII. and Queen Alexandra respectively, and two of Cupressus sempervirens planted by King Manuel and Queen Augusta Victoria of Portugal.

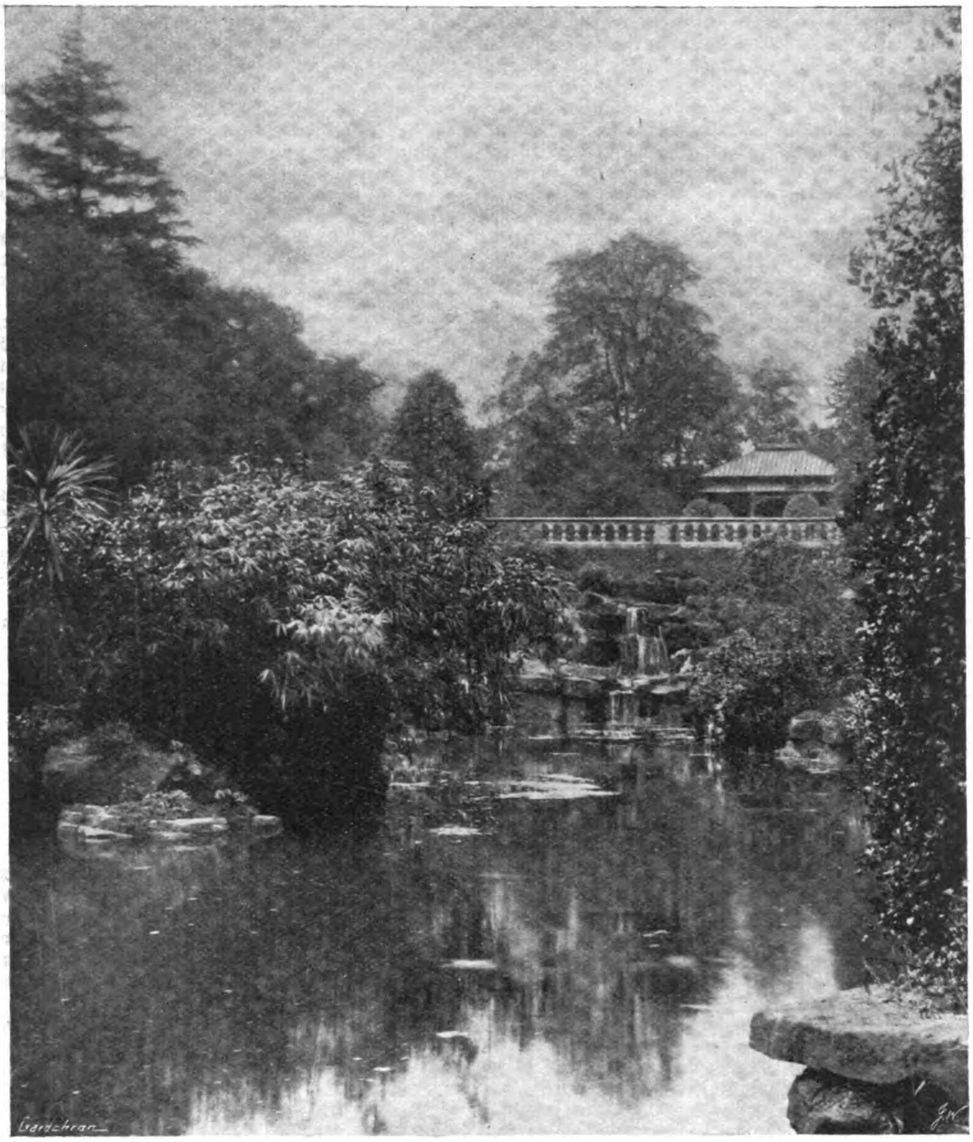


FIG. 45.—WARREN HOUSE: VIEW OF THE LAKE AND WATERFALL.

Whilst the dressed portions of the gardens are very interesting, the chief glory of Warren House is the extensive natural woodland with the many beautiful sylvan walks. The place abounds in Rhododendrons and Azaleas in great variety, these beautiful flowering shrubs forming avenues through many parts of the grounds, and equally as beautiful as the Rhododendrons and Azaleas are the Hollies, of which there are many remarkably fine specimens, several of perfect pyramidal shape up to forty feet high. It is rather strange that arborescent subjects should luxuriate as they do at Warren House, for the soil is of a very light, sandy nature and dries out quickly in summer. Doubtless the big trees and shrubs have penetrated to the deeper, moister sub-soil from which they obtain the necessary moisture.

A very pleasing walk on the south-west portion of the estate leads through a glade of such shrubs as Rhododendrons, Andromeda floribunda and Hollies, to a rockery and pool in a garden where Japanese Maples, dwarf Abies, Cotoneaster horizontalis and Muehlenbeckia complexa, the last in size like a very big shrub, are included. Here Rock Roses grow to a large size, and as showing how favourable the situation and climate is, it may be mentioned that Francoa ramosa remains out-of-doors all the winter without protection and grows and flowers freely each season. The path leads to an enclosed croquet lawn with a summer house, which may be seen in Fig. 45 at the back of the ornamental wall enclosing the croquet lawn. The borders at the foot of the wall inside the lawn are planted with flowers, including Lilium regale, Gladioli, and many Sweet Williams and there are masses of Rambler Roses at various spots. Near to the summer house are four standard trees of Cotoneaster Simensii, a method of training not usually practised with this shrub. The lake seen in Fig. 45 is contiguous to the croquet lawn and is one of several fine pieces of water on the estate. Two splendid silver Hollies, each thirty to forty feet high, grow near to where the stream enters the lake. This part of the ground is ablaze in early summer with the bright colours of Azaleas and Rhododendrons and the perfume of these plants is delightful.

There are about forty acres of woodland at Warren House, principally of Silver Birch and Oak, with Rhododendrons as an undergrowth, and the whole of this large area may be described as a woodland garden. In some parts where clearings have been made Camellias have been planted and these have grown splendidly and they flower freely each season. There are also almost all of the cultivated species and varieties of Magnolias; the rare Magnolia macrophylla has flowered and set seed pods this season. A number of Chinese plants, introduced by Mr. E. H. Wilson, are growing in favoured spots, the most interesting being a fine specimen of Rhododendron calophytum.

The Japanese Lily lake in the upper grounds is another very pretty piece of water almost enclosed by beautiful trees and shrubs. The margins of this small lake are planted with such things as Retinispora squarrosa, Acer palmatum, which succeeds finely in this snug spot; Polygonum sachalinense, Phormium tenax, Hemerocallis, the flowers of which at the time of my visit were overhanging the water; Eulalia japonica zebrina, Osmunda regalis and other Ferns. The water Lilies have made great clumps and include such choice varieties as Gladstoniana, Marliacea chromatella, rubra, etc.

Whilst this water garden is known as the Japanese Lily Lake, the principal Japanese gardens are in the lower portions of the grounds (see Fig. 44). The introduction of many beautiful stone and metal ornaments brought from China and Japan serves to make this Japanese garden of very realistic appearance; guarding the entrance are two kylons that were brought from Pekin, beautiful examples of oriental art and very valuable.

To enumerate the many interesting and rare plants contained in this Japanese garden would require more space than is available for this notice, and only a few may be mentioned as being extra fine, such as Taxodium sempervirens alba-spica, the golden Acer Negundo, Abies pungens glauca; Corokia Contoneaster, Lonicera pileata, Leptospermum Nichollii, Wistaria Russelliana, Taxus japonica, Acanthopanax Maximowiczii, and the variegated Osmanthus ilicifolius. It may be observed, also, that Skimmia japonica grows to a very large size and has made clumps almost as big as Rhododendrons.

The way through the Japanese garden is traversed by stepping stones placed irregularly and leads over a stone bridge where the water tumbles down several feet to the dell below. I was informed that when the flowering Cherries, Magnolias, Pyrus Malus floribunda and similar spring-flowering shrubs are in bloom, the scene in this part of the gardens is most enchanting.

In the depth of the Japanese garden Bamboos grow to a remarkable size, in fact they make bowers with dense growth overhead. One feature that impressed me very much was the blue colour of the Hydrangeas, for they are all a real blue shade and as there are large plantings of them the effect can well be imagined.

There is a new Japanese garden formed on a portion of the old Coombe Wood nursery of Messrs. James Veitch and Sons. A stream runs through it and fills a large piece of ornamental water. A grass vista with herbaceous borders on either side leads to this lake, which is one of the finest examples of water-gardening I have seen for a long time. The soil in this newer part of the estate is of very favourable character and everything seems to grow in perfection. Along the narrow stream are such Primulas as P. pulverulenta, P. Beesiana, P. japonica, P. helodoxa, P. Poisonii, and P. Cockburniana, not singly, but in great masses and with them are associated such other water-loving plants as Iris Kaempferi and Spiraea Davidii, which has beautiful pink flowers. A little further from the banks are growing Bamboos, the graceful Lonicera nitida, Senecio tanguticus, Japanese Maples, Lilium pardalinum, Viburnum tomentosum, V. Carlesii, a weeping Mulberry, Elaeagnus punctata aurea, the blue Picea, P. pungens glauca; and a very fine specimen of the fastigiate Cupressus Lawsoniana Wisselii. Two imposing golden Willows overhang the lake, which is planted with a variety of Nymphaeas and in the vicinity is a whole host of interesting Conifers, many of them in small ornamental receptacles. The higher portion of this part of the estate contains a Rose garden and a Rose border with herbaceous plants in the background; this border contains many fine plants of Lilium regale, of which Mr. Penton has raised very large numbers from seeds. As the highest ground is reached a splendid view of Wimbledon Common and Coombe Hill Golf Course is obtained.

These are but a few of the many fine features in this notable suburban garden, which is under the care of Mr. W. J. Penton, who is an enthusiastic gardener and as capable as he is enthusiastic, judging by the able manner in which the place is managed. *G. F. T.*

NURSERY NOTES.

MESSRS. FRANK CANT AND CO.

Notwithstanding the signal revolutions which modern times have witnessed in the kingdom of Flora, the Rose stands supreme and as a home for its cultivation, Colchester is pre-eminent, for there is to be found the great Rose nursery of Messrs. F. Cant and Co. Colchester is famous, too, for its oysters, the beds of Colne being productive of between one-and-a-half to two millions of shell fish every year. After visiting the above nursery one wonders whether it is the Rose or the oyster which has made Colchester so famous.

On making an exit from the station a large hoarding faces the visitor at the bottom of the incline and directs him to the Braiswick nurseries and an uphill walk of a few minutes brings one to the "Home of the Rose" as it is signified on the well-prepared catalogue of the firm. Our visit was made in the height of the Rose season and we felt half ashamed for intruding at so busy a time. The National Rose Society's summer show had been held a week previous, when Messrs. F. Cant had literally swept the board in the nurserymen's classes and took the blue ribband - the Championship Trophy for seventy-two blooms and had been successful in every premier class in which they had competed up-to-date. At the time of our visit active preparations were being made for the Windsor show, where we were pleased to see that Messrs. F. Cant and Co. crowned themselves with additional distinction by carrying off the King's Gold Vase. Since that date the firm has been adding honour to honour, and we doubt if any other growers have performed so great a feat as they have done this season.

Rose growing is a big business and it is hard to explain why Roses flourish so successfully as at Colchester. The soil and climate are, of course, good, but the success is due more to the fact that Roses and Roses only are grown by the firm. A speciality is made of them and hence the intricacies of the business, as only true specialists can understand them, are mastered.

Messrs. F. Cant and Sons' nurseries are situated on high ground and looking towards the valley of the Colne, a riot of colour spread acre after acre meets the eye. Roses are everywhere, and as a detour was made up and down the paths, examining this and that variety, it was a surprise to see so many of the old and tried varieties still in evidence. There were also the newer introductions, for a Rose specialist must needs carry every good variety in cultivation, but it is not our purpose to weary the reader with an enumeration of varieties. Hugh Dickson, Rosabel Walker, K. of K., Henry Nevard--a highly perfumed Rose which gained the £100 Clay Cup of the Royal Horticultural Society in 1922 - and C. V. Haworth were a few of the best scarlet varieties. The last-named is a beautifully shaped flower, the colour is of the deepest of crimsons, and above all it does not turn "blue." Of pink and salmon-pink shades, Mrs. Henry Morse, Mme. Abel Chatenay, Captain F. S. Harvey Cant, and Los Angeles were all to be seen smothered in bloom, and the white varieties Marcia Stanhope, very fragrant; Mme. Jules Bouche, and Mrs. Herbert Stevens were likewise of high standard. In the mixed copper and yellow shades Golden Emblem, Mabel Morse, Severine, Lady Inchiquin, and Betty Uprichard were represented by large masses and all are of exceptional merit.

Single Roses are regaining their lost popularity, and large stocks of these are grown. Mention may be made of the ever-popular Irish Afterglow, Irish Elegance, and Mrs. C. E. Salmon--an introduction of the firm which produces large trusses of soft, salmon-pink flowers suffused with orange--a shade which should prove very attractive for table and room decoration under artificial light.

Messrs. F. Cant and Co. have not lost sight of the demand for Roses with fragrance, for as mentioned above, they gained in 1922 the Clay Cup awarded for the best Rose of good form and colour, not in commerce, possessing the true old-Rose scent; in 1923 the same award was made to Rosemary, one of their introductions -a large pink H.T. Rose.

The firm also carries large stocks of Climbing Roses, and for three years in succession—1920-1922—they were awarded the Cory Cup of the National Rose Society for the best new climbing Rose not in commerce. In 1920 the award was made to Yvonne, which the year previously received the Gold Medal of the National Rose Society. It flowers continuously throughout July, August and September and bears a wealth of sweetly-scented, soft-pink flowers. Chastity, a fine white variety, secured the cup in 1921, and in 1922 the honour fell to Snowflake, which at the time of our visit was laden with snow-white blooms carried in large, graceful trusses.

These are only a few of the successes of Messrs. F. Cant and Co., but they are sufficient to show that the firm is a progressive one, and having its interest centred on the Rose it is only to be expected that the quality of their produce is of the best. There is just one cultural point that is worthy of notice. A very striking feature of the Braiswick Roses is that the dwarfs are budded very close to the roots of the stock, thus reducing the formation of suckers by the stock to a minimum.

HORTICULTURE AT THE BRITISH EMPIRE EXHIBITION.

DAHLIAS.

That Dahlias are only useful for late autumn display in the garden, and only satisfactory when fine weather prevails throughout September and October is an entirely erroneous idea, although not a few folks still subscribe to this mistaken notion. The exhibition of Dahlias at Wembley during the present month, and the displays in the public parks of London should effectively dispose of the fallacious idea.

Messrs. W. Treseder, Ltd., of Cardiff, are large exhibitors at Wembley and have an attractive Dahlia garden composed of about sixteen large beds surrounding a modest kiosk. Grass verges and a few examples of topiary work are the only adjuncts. A fortnight ago the stout stakes used to support the strong-growing Cactus and Decorative Dahlias were somewhat conspicuous, but now few are noticeable, and a week hence it will be difficult to discover the supports.

The dwarf, Decorative varieties are now making a fine show, and among these a few of outstanding attractiveness are Ebor, three feet, a rich salmon-pink and very free: Satyr, three feet, deep rich scarlet, a handsome variety; Nancy, three-and-half feet, deep rose-pink with golden bases to the central florets, the flowers carried well above the foliage; King Harold, a deep maroon variety of Dutch origin, but the flowers are a trifle heavy and would probably suffer during heavy winds, despite their stout stems; F. Graham Bird, a single Decorative sort with somewhat reflecting florets of a fine crimson-scarlet shade, that is very effective; Bishop Crossley, even finer than the last named, bears its elegant, clear scarlet flowers on wiry stems, and is a very suitable variety for cutting and for bedding; Treseder's Bedder, two-and-a-half feet, profusely coloured and carrying its deep scarlet flowers well above the foliage, a fine sort for bedding; Barlow's Bedder, dwarf, crimson-scarlet, very free and showy; and Windermere, white, an exceptionally free flowering variety, and the dainty blooms are fine for indoor decoration.

Miniature-flowered Paeony varieties constitute a very useful section for garden decoration and for cutting, as the blooms are of a moderate size, carried well above the foliage on long, wiry stems. A few of the best of this group are Crimson Glow, three feet, with showy flowers of a pleasing, deep crimson shade; Vida, one of the very best, as it carries a wonderful profusion of amber-coloured flowers; Aglaia, also first rate, the florets of the fawn, salmon-shaded flowers reflexing slightly and elegantly; Etta Booker, raised by Messrs. Treseder, a particularly pleasing sort as it bears an abundance of rosy-salmon flowers; Fairy, blush with salmon-pink shading, a delightful Dahlia, and at present only one-and-a-half feet high, but free flowering; Dazzle which is well named, as its showy flowers are of a brilliant scarlet shade and borne on stiff, erect stems—certainly one of the finest garden Dahlias in the collection during mid-August; Midas, one of the showiest of the true Paeony-flowered varieties, as it carries its large, light yellow flowers in abundance on stout stems; Saracen, a rich, deep scarlet, with a dwarf habit and developing so many of its big, effective blooms that it should be suitable for bedding, and Vesuvius, brilliant scarlet, as its name suggests, this also being an excellent variety of good habit and free-flowering

Lolah, is an effective and an elegant Collerette variety, orange-scarlet with a yellow collar; Padre, maroon-crimson with a white collar, is also attractive by reason of its contrasting colours and good habit; Vestal, two-and-a-half feet, is one of the few one-coloured Collerette varieties, as it is pure white throughout, is very free, and an effective garden Dahlia; Peronne, orange-scarlet, and Lilian, buff-orange, are both good, but the latter is at present the better of the two, as it is particularly free-flowering and effective.

The Pompon varieties were not yet at their best, but such sorts as Ganymede, Daisy, Phoebe, Nerissa, Darkest of All, Little Beeswing and Neatness have already made fine bushes, and promise a profusion of bloom in a few days.

The true Cactus-flowering varieties did not interest us greatly, but we saw them on a windy day when the big blooms, swayed by the wind, were inclined to hang their heads. Joan, a white variety of the Star type, is good and particularly free-flowering, and, therefore, useful for bedding or for cutting.

Two varieties that attract a great deal of attention in Messrs. Treseder's Dahlia garden at Wembley, are Lemur, a miniature Paeony-flowered variety with finely divided purple-bronze foliage and dusky crimson-scarlet flowers. This is of dwarf habit, fine for bedding, and suitable for the front row in a large bed of red or orange-coloured varieties. The other conspicuous sort is Frato, a double Decorative variety, with deep, bluish-lilac flowers of large size, borne freely and carried on long stems. It is probably the nearest approach to blue in a Dahlia, and its distinctive colouring makes it conspicuous. It would have served a useful purpose had Messrs. Treseder grouped the mauve, lilac and "blue" varieties together, so that the colours could have been compared—these are for isolated splendour, and by no means companionable with scarlet and orange varieties.

Messrs. Dobbie and Co. have a couple of beds of the handsome, scarlet Coltness Gem close to the entrance to their Rose garden, and the dwarf plants are carrying an abundance of brilliant flowers. On the other side of the garden we noticed two beds of Dobbies' Bedder, a showy, double variety about 2½ feet high, with shapely and not too massive flowers of buff colour, suffused with pink, and carried aloft on long, stiff stems.

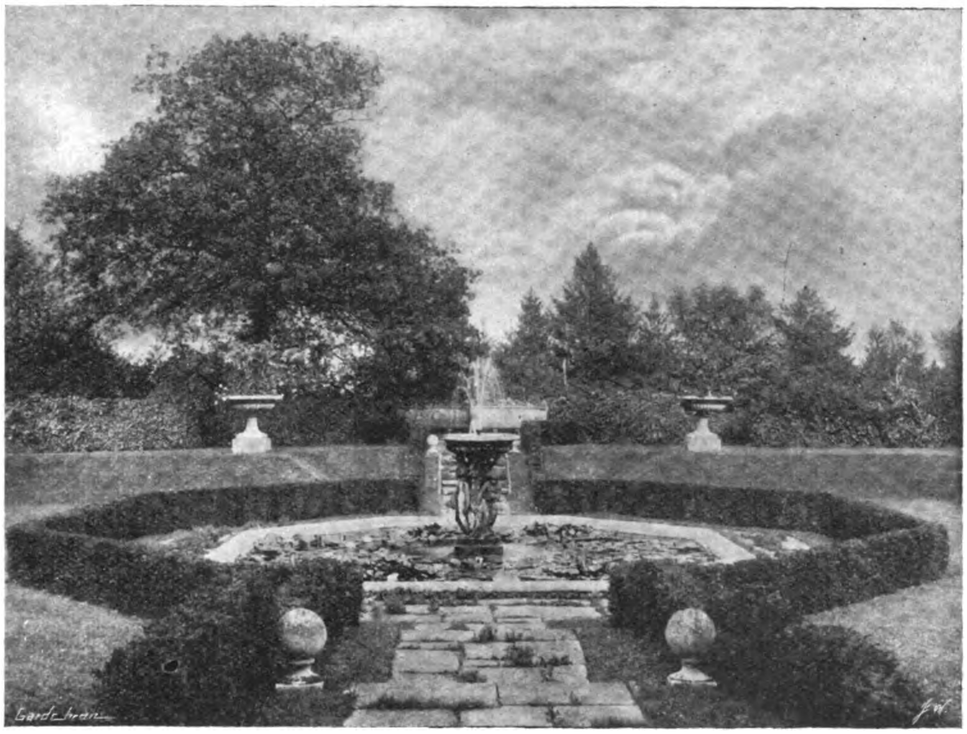


FIG. 46.—WARREN HOUSE: THE OLD ENGLISH GARDEN.

(see p. 132.)

IMPERIAL BOTANICAL CONFERENCE.

The co-ordinated series of papers on Tuesday afternoon, July 8, were on "The value of selection work in the improvement of crop plants." Professor J. Percival opened the session. Plant breeders and all who are engaged in the cultivation of farm and garden crops should periodically pay some attention to the wild flora of their country. Nowhere among the natural vegetation are found the large and luscious fruits of the garden, the big edible roots of the Carrot and Beet, or the long, well-filled pods of the Pea and Bean; the all-important cereal grains are also absent. The contrast between the crops of the field and garden and the natural flora is arresting, and when it is realised that the cultivated crops are the descendants of plants once wild the imagination is enlivened and stimulated. The time and exact mode of origin of our cultivated plants is not known; most of them have been cultivated for not less than three or four thousand years. Though not a single food plant of first-class importance has been added to our fields or gardens within historic time, nevertheless, with a few exceptions, the wild prototypes from which the cultivated crops have been derived can be more or less clearly recognised. On comparison it is seen that the peculiar characters which rendered the plant attractive or useful to man have been greatly increased. Such "improvement" is entirely dependent on the natural variability of plants and their responses to the environment of our cultivated fields and gardens. Every individual possessing a useful character in excess of the average is an improvement and it is the object of the plant breeder to secure crops of such individuals. Selection does nothing more than isolate and preserve desirable forms of plants; it plays no part whatever in their origin. Several somewhat different methods of selection are practised.

Selection of spontaneously occurring individuals exhibiting improved characters has provided us with most of the best of our cultivated plants.

Mass selection is another method formerly much practised and still of especial value in particular cases. In all countries and in all ages this method of selecting the best plants of a crop, growing from the seeds of them and again selecting from their progeny has been found to result in a gradual increase in the yield of crops and to the production of a more uniform plant. The production of Schlanstedt Rye may be cited as an example. The process rarely succeeds in fixing the desired character, and the improvement achieved is gradually lost when selection is relaxed or discontinued. The explanation of the success of this method is probably that it is nothing more than a means of isolating particular forms from a mixed population.

Mass selection is now largely superseded by what is termed line of pedigree selection followed by the progeny test. Single promising ears of plants are selected from the ordinary crop, but instead of mixing the grains from these as in mass selection, the progeny of each ear or plant is raised in separate rows or plots and the best of these selected and multiplied. Similar selection and testing of the progeny of individuals produced directly by hybridisation or of individuals from the progeny of these has given us many valuable forms of cultivated plants. Through the discoveries of Mendel and the more recent investigations regarding the transmission of characters of plants from one generation to another, haphazard hybridisation which has been in vogue since the 17th century is being slowly replaced by crossing with a definite object.

Mendelism has in no way reduced the importance of selection; if anything the knowledge of cumulative factors, inhibitive factors, complementary factors and linkages, only serve to emphasize the necessity of selection and the many difficulties attending it. Owing to the work of Johanssen on separate lines from single seeds, the practice of repeated selection within such lines, especially of self-fertilized plants, has been checked. It is being taught that the single initial selection in self-fertilized plants is alone of value; once obtain your improved variety and further selection is superfluous. This is to be regretted, for hereditary variations, mutations, or whatever they may be called do occur in such lines and it is only by renewed selection that these can be discovered and isolated; even if we were quite certain that the causes which produce fluctuations do not affect the hereditary mechanism of the plant we should be justified in the practice of repeated selections on this account. Johanssen's selections were continued for much too short a time to warrant a positive decision regarding the occurrence or non-occurrence of hereditary changes in his isolated lines. Yielding capacity, which is one of the most important characters of cultivated crops, is at the same time probably the most difficult of all characters to determine. The actual yield obtained in any particular case is not only dependent upon the hereditary yielding capacity of the plant but also upon a multitude of conditions among which may be mentioned size of seed, the amount sown and the time of sowing, the depth at which the seed is deposited, the geological and physical nature of the soil, manuring and previous cropping of the land, rainfall and variations in its distribution during the growing period of the crop, temperature of the air and soil, and intensity and duration of sunlight. Variations in one or more of these conditions frequently cause extensive modifications in the yield of a crop. Yields of the same line of cereals grown in different localities often differ very widely; yields even from plots of equal area side by side often differ by 20 to 30 per cent., and yields of neighbouring plants on the plots may differ by so much as 100 to 500 per cent.

Professor R. G. Stapleton followed with a paper concerning the value of selection work in herbage plants. From the point of view of pure genetics, herbage plants present a problem of extreme difficulty. Of the grasses and clovers of agricultural importance throughout the Empire the vast majority are naturally cross-pollinating, while the number of species which are capable of producing vigorous progeny under superimposed conditions of self-fertilisation, although not definitely known, is probably limited—some of the most important species, such as Red and White Clover being to all intents and purposes self-sterile. It is evident, therefore, that improvement by a process of selecting pure lines has but a limited application to herbage plants, and is completely out of the question in the case of some of the most important species. Improvements by adopting accurate methods of hybridisation and the selecting of true breeding segregates and building up pure lines of these has probably a certain, though limited application. There is, however, considerable evidence to show that the improvement of herbage plants is not surpassingly difficult. It is probable that the degree of purity demanded of a first-class cereal or Potato is not essential in a herbage plant. It is a remarkable fact that national and local strains of relatively very considerable purity occur in the case of all the chief herbage plants. There is evidence to show that this is in part due to the methods ordinarily practised with reference to seed production which tends to accentuate the very wide range that occurs, in the case of every species, between the flowering date of the innumerable strains which in the aggregate constitute that species. The late-flowering strains in the main tend to be dense, leafy, hardy, and persistent—the early-flowering strains lax, less leafy, less hardy, and less persistent, and under natural conditions extreme strains have but little opportunity for cross-fertilisation.

In the first instance, selection may usefully take the form of seeking for habitat races of agronomic importance. Individual plants of outstanding merit may also be selected, and very real progress can undoubtedly be made by adopting methods of bunch breeding with plants so selected, for although the cross-pollinating species are of necessity highly complex and mixed, there is a very real limit set to the degree of complexity by the wide flowering range, usually at least six weeks, between the first and last strains to erect their stigmas and anthers. Perhaps the greatest difficulty presented to the plant breeder concerned with herbage plants is the question of accurately assessing the agronomic value—the herbage value—of different strains, particularly when the material available is limited, consisting in extreme cases, perhaps, only of single plants.

Dr. W. Lawrence Balls next spoke on "Defects in the Theory and Practice of Selection." In the theory of selection we seem to be in need of much clearer concepts and stiffer definition of phenomena. The successive stages of uncertainty in our material were summarised as (1) A pure strain, self-fertilised, reproduces itself unfailingly, except for the very rare chance of mutation, and no selection can be made therein. (2) A strain which is not absolutely pure may simulate mutation by very rare recombinations of genes. (3) Pure strains which have been contaminated by the presence of even a single rogue must eventually show acclimatisation or deterioration, although this change takes place very slowly at first. (4) The mixed variety produced after a term of years in the preceding case, or immediately by carelessness, can have no clear biological reactions to its environment, since the reactions of any one year will be partially observed in the following year through the operation of natural selection.

(*To be continued*).

VEGETABLE GARDEN.

THE LEEK.

ALLIUM PORRUM. LINN.

The early history of the Leek is involved in confusing and comparative obscurity. Don's *Hort. Cant.* gives Switzerland as the country of origin, and 1797 as the date of introduction, but the latter part of the statement can hardly be correct seeing that an Edinburgh seedsman catalogued two varieties, French and London, in 1754, and the same two varieties were offered by John Mason of Fleet Street in 1793. Miller, who declined to endorse the action of Linnaeus in classing the Leek under Allium, quotes the following two varieties under Porrum, viz.:—"Porrum commune capitatum: C. P. Bauhin. Pinax. Common headed, commonly called London Leek. Porrum siberiense: Siberian Leek."

Prior to its mention by Miller and Linnaeus, Gerard and Lobel had written extolling its virtues and uses in England; Clusius and Dodoens on the Continent, and, earlier still, Dioscorides and Pliny had sung its praises in Greece and Rome. It is believed also to have been known to the Egyptians in the days of Moses, and a passage in Numbers XI. 5, is supposed to give support to this idea, but biblical scholars affirm that the specific translation to "Leek" is questionable, as the same original word is translated in other parts of the Old Testament scriptures as "hay," "grass," and "herb." The fact that Garlic and Onions are mentioned in the same verse in Numbers renders it possible that the translation is correct.

Vilmorin's *Vegetable Garden* also suggests Switzerland as the country of origin, but no authority is cited in support. Vilmorin also states, "Notwithstanding the different names given by botanists to the two plants, the Leek and the Great-headed Garlic are probably identical, the only difference between them being that in the case of the latter cultivation has developed the production of Cloves, while with the former the object has been to develop the leaves in such a manner that they may both be numerous and cover one another at the base for the greatest distance possible," and, in treating of its uses he points out "That it is the blanched lower part of the leaves, *improperly called the stem*, of the plant which is eaten."

It would have been very helpful if the authors had offered some reason why one development (Giant Garlic) had taken on the perennial, and the Leek, the biennial habit.

It may be of interest to state that there are at the present time some plants of the Wild Garlic in bloom in the R.H.S. Gardens at Wisley; these have been compared by the writer with the illustration of the Wild Garlic which appears in the *Herbal* of Dodonaeus, 1618, and are identical in every particular. It is named by Dodonaeus, in Brabant, Wilt Loock; in Latin, Allium sylvestre tenuifolium; in Greek, as named by Dioscorides, Ophioscorodon; and in Engelsch, Wilde Garlyke.

As regards the Porrum siberiense, a variety was offered under that name from Japan a few years ago, but on being tested it proved to be a variety of Allium fistulosum (Welsh Onion); the leaves were hollow, not flat like those of the Leek.

There is no doubt that the Leek had a more appreciative reception in Scotland and Wales than in England. In Wales it very early became the national badge, owing its exalted position to St. David who flourished in the fifth century, which, by the way, rather upsets Don's theory that the introduction of the Leek dates from 1797.

The subject of "docking" of Leeks before transplanting is not often referred to in modern gardening works but by some of the older writers it is treated as a matter of some importance. Thus Dodonaeus, in illustrating the chapter on The Pareye (the Brabant name of the true Leek) gives two separate pictures, one of the trimmed or Cut Leek, and the other of the Common Leek in its natural condition: so far as appearances go, the docked Leek have very much the best of it. It appears to have been a very ancient practice, for Dodonaeus states that the Leek treated in this way was named by Columella and Palladius, Porrum sectivum. In Ainsworth's *Latin Dictionary*, Porrum sectivum is quoted from Juvenal to illustrate the adjective sectivus, *i.e.*, "that is often cut." In the *Scot's Gardiners Director*, 1754, Justice states: "About the beginning of July take your largest and best rooted Leek plants, and having cut off their long blades by two inches and trimmed their longest fibres, plant them in a piece of rich, light earth . . . if you judge it fit to top your Leeks it must be done with a knife."

They certainly have a tidier appearance in the beds and would look more elegant than the long, straggling-leaved plants which too often decorate (?) the exhibition table.

The list of varieties is not a long one, and the differences between some of them are not very great. In the main they represent a considerable amount of careful and intelligent work in the matter of the selection which is absolutely necessary to maintain purity of stock in varieties that have been a long time in commerce, and to note, and endeavour to perpetuate, any specially new and meritorious feature that from time to time appears.

The following is a brief list of some of the best European varieties which are offered at the present day:—London Broadflag (British), one of the earliest and most generally useful varieties: needs slight protection in severe weather. Musselburgh, a fine Scotch variety, raised in 1830 by Thomas Handasyde, seedsman, Fisherrow, and is the most widely grown and popular variety to-day. Lyon's, raised by a Scotch shoemaker named Lyon, may best be described as an enlarged Musselburgh: a grand Leek but rather variable in colour. Royal Favourite, raised by the late Mr. Thomas at Windsor. It is a very large, solid, dark green variety of exceptionally mild flavour, and received the highest award at the recent trials at Wisley. Those who grow Leeks for exhibition find Champion, International, Monarch, and Prizetaker excellent varieties for the purpose: the length and size of the blanched stem (so called) depend in a great measure on cultivation.

French varieties of great merit are Mézières, large and hardy; Rouen, large, dwarf and very dark green; Carentan, an improved Rouen with very broad leaves; and for those who want a large Leek very early, the large yellow Poitou is very useful, but it is not a hardy variety and has a very pale colour. The Bulgarian Giant, and the Italian Giant are large Leeks, of a good colour, but not sufficiently hardy for our winters.

In addition to the sorts mentioned above there are numerous varieties which many intelligent seedsmen have developed for their own special trade, and which, in the main, are more or less improved forms of Musselburgh, Lyon's, or Rouen. Other varieties that have very little interest for the British gardener are the Perpetual, which produces an abundance of suckers useful for flavouring, and Mountain Leek, a small, poorly developed variety, grown in Southern France and valued for its hardiness.

And now as a final word. Lovers of Shakespeare and horticulture are advised to study the historical play—Henry V, Act 5, Scene 1—where, in the interview between Fluellen and Pistol, they will find a very amusing illustration of what Shakespeare understood by "Eating the Leek." *S. B. Dicks.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

See Tables and Summaries, Ante, pp. 79-84).

(Continued from p. 117.)

ENGLAND, E.

NORFOLK.—The Apple and Pear crops are generally under the average; the earlier varieties of Apples are the most promising, Gladstone, James Grieve, Worcester Pearmain, Domino, Warner's King and The Queen are fairly good. Fruits of Lane's Prince Albert and Lord Derby are very scarce. Peaches and Nectarines are both very good crops. Cherries were an average yield, but Plums are very poor. Of the smaller fruits Raspberries, Gooseberries, Red Currants and Strawberries were all very good and Black Currants an average crop. The soil is a sandy loam of fairly good quality. *H. Naylor, The Pleasaunce Garden, Overstrand, Cromer.*

—— The Apple crop is very much below our anticipation, after so much wealth of bloom, no doubt owing continued much wet weather at the setting period. All varieties of Pears are well over the average and the fruits required to be thinned considerably; the trees are remarkably clean. Cherries have been well above the average and the trees have not been troubled with the Cherry sawfly as in previous seasons. Plums are an average crop, on wall trees especially. The Plum aphis has been rather troublesome, no doubt owing to the dry weather of early summer. Small fruits of all kinds are cropping in abundance. Strawberries of all varieties have been first class. *J. E. Fitt, Earlham Hall Gardens, Norwich.*

——Although there was promise of bountiful fruit crops in early spring, all fruit trees have only average crops, and this is better than very heavy crops, as the fruits are all swelling well and promise to be of good quality. Cold winds and heavy rains at flowering time were very trying, but the weather for the last fortnight has been good. The following useful, early flowering varieties of Apples are carrying very good crops Peasgood's Nonesuch, Warner's King, James Grieve. The late-flowering Court Pendu Plat is also carrying a good crop. Our soil is very light, and is enriched freely with pig manure. *Isaiah Johnson, Catton House Gardens, Norwich.*

SUFFOLK.—The Caterpillar pest is responsible for the short crop of Apples in this district, and where no spraying was done, or where orchards are in close proximity to forest trees, the Apple trees are in a sorry condition. Apple Mildew also is on the increase. Raspberries and Black Currants were exceptionally fine, but Strawberries suffered from the dry hot days following so suddenly on a "panned" condition of the soil after heavy rains. *A. K. Turner, Orwell Park Gardens Ipswich.*

——I have some hesitation in recording the Apple and Pear crops as average, as in the case of Apples but few trees are heavily laden, although as the trees are clean the fruits will probably swell to a good size. Apple scab is prevalent in many places. Many Pear trees are carrying good crops, but I have noted many trees of Williams' Bon Chrêtien almost denuded of fruit through attacks of the Pear midge. The Plum crop is a failure. Bush fruits and Strawberries were abundant and good. Caterpillars of the Gooseberry Sawfly defoliated many Gooseberry bushes in cottage gardens. The wet weather of May and the first fortnight in June was succeeded by a month's drought. *E. G. Creek, County Horticultural Instructor, Shire Hall, Bury St. Edmunds.*

MIDLAND COUNTIES.

BEDFORDSHIRE. The Apple crop is very disappointing; there was a very fine show of blossom but a number of thunder storms when the trees were in bloom did much damage; a hail storm on June 8 also damaged the trees and blossom very badly. On May 20, 2.51 inches of rain was registered during heavy thunder storms. The total rainfall for May was 6.32 inches, which is the heaviest rainfall since August, 1912, when 6.5 inches was registered. Pears look well; the trees were laden with bloom but as often happens the setting of the fruits was rather disappointing. Plums are a very patchy crop, the variety Victoria being very scarce; other sorts are variable. Peach and Nectarine trees all set good crops but there has been a lot of "die back" on both these kinds of fruit trees, owing, no doubt, to the wet autumn, when the wood failed to ripen properly, and to sharp frosts during winter and spring. Strawberries were very good, The Duke variety being splendid. Laxton's Latest promises well. Gooseberries were a wonderful crop, also Red and White Currants. Black Currants were the best we have had for years, a wet June favouring them, and the bushes are very healthy. It is a most favourable year owing to the absence of aphis; we have not had to spray yet. Our soil is sandy. *W. G. Warner, Chicksands Priory, Shefford.*

—— Among small fruits Black Currants are worthy of special mention as being, round about this locality, a much heavier crop than usual and of very good quality. In this particular garden our crop this year equals those of the three previous years put together. The quality also is of a high order. The most accurate word to describe Plums is failure, notwithstanding the fact that some of the villages adjoining here are recognised Plum-growing centres. This makes the fourth year in succession that the orchard Plum crop of this garden has failed. All kinds of fruit trees appear to be, on the whole, practically clean and free from the customary pests and blight. *Charles Turner, Ampthill Park Gardens, Ampthill.*

BUCKINGHAMSHIRE.—Although the crops of Apples are much under the average the quality of the fruits is good and the trees remarkably free from blight; this latter remark also applies to the Pears. The quality of bush fruits was excellent and but few traces of blight or Caterpillar have been seen. Plums and Damsons in some orchards are complete failures. Strawberries gave average crops of good quality berries. On the whole the crops are rather scanty but the trees are healthy and clean. Our soil is a heavy, retentive loam, resting on clay, and the natural drainage is bad. *William Hedley Warren, "Sunnymead," London Road, Buckland, Aylesbury.*

——The Apple crop is patchy, and I think there will not be more than half the average yield of this fruit. We had good crops of Cherries Early Rivers, Frogmore Bigarreau and Black Heart, a medium crop of Black Eagle, and of all other kinds about half a crop. Of Pears, the Hessle is a full crop, but Williams' Bon Chrêtien and Pitmaston Duchess did not set so well, whilst of other kinds we have below an average crop. Plums are bad generally; Czar is fairly good, Victoria not so good; other varieties are very light crops and almost a complete failure. Strawberries, Raspberries, Gooseberries, Black and Red Currants were all bountiful crops. *Philip Mann, Education Sub-Offices, Aylesbury.*

—— The fruit crops in general are infinitely better than those of last year. Apples only among all the fruits, are below an average crop. The Apple trees bloomed profusely, but climatic conditions during the setting period appeared to have an adverse effect upon them, with the result that although the quality is good the crop is an exceedingly thin one. Pears, and all other fruits are excellent both in quantity and quality, and the trees have kept remarkably free from insect pests. *F. Reid, Dropmore Gardens, Maidenhead.*

(To be continued.)

HOME CORRESPONDENCE.

Strawberry, The Duke.—I am glad to respond to Mr. Pullin's suggestion (page 65) that other growers should give their opinions on this comparatively new variety. My experience with it in private garden and field culture, the former in hundreds and the latter in thousands of plants, is that it is the most serviceable general purpose variety that has been put into commerce during recent years; indeed I am not sure that it is not comfortably the best since Royal Sovereign came into its wonderful kingdom. The plant is hardy in constitution, thrives on practically all soils (though like all Strawberries it is finer in some places than in others), it is a prolific bearer, and if the quality cannot be said to be on the level of British Queen it is good and very refreshing. I have seen it grown as an annual in a town where the atmosphere is most unfavourable in regard to plant life of any kind, and it was so far excellent as to bring complete satisfaction, and it is not every Strawberry that will do this. So far as an attack of red spider is considered one may say that Strawberries of all sorts are like Melons of all sorts and many other plants, too; they will become infested with this troublesome pest when there has been error in management as to create unfavourable atmospheric conditions. *W. T.*

The late Mr. R. A. Malby.—Your kindly and sympathetic remarks, in last week's issue of *The Gardeners' Chronicle*, on the late Mr. Reginald A. Malby are greatly appreciated by Mrs. Malby and the members of his family (his parents and sisters). As a close personal friend of the deceased and one of the executors under his will, I would point to two errors into which you inadvertently fell. Mr. Malby's age was forty-two years and not forty-five as stated. You also refer to him as the proprietor of the world-famed photographic business. The firm of Malby and Son, however, consisted of my departed friend and his father, Mr. H. T. Malby, F.R.P.S., and there is no doubt that the son inherited much of his skill from his father. Whilst the latter has not taken an active part in the business during the past few years his advice has always been at the service of his son. Fortunately, Mr. Malby senior is able to take up the reins and, intends, in conjunction with Mrs. Reginald Malby, who has ably assisted her husband in the past, to continue the business. *T. W. Rayment.*

Erinacea pungens (see p. 89).—I was greatly interested in the plant of Erinacea pungens which formed the subject of the supplementary plate in the issue of August 9. The hardiness of the plant is much greater than many suppose, and it should find its way into many more gardens. I have known the species for a number of years in the rockery of the Royal Botanic Gardens, Edinburgh, where it is growing in full sun and wholly exposed. It evidently requires a warm place and full exposure to the sun; I saw it recently in a rock garden in a private establishment, and the specimen was evidently suffering from being partly shaded by a shrub and by want of sun in consequence. This particular plant, although growing in a warmer district, was not nearly so happy as that at Edinburgh. One's confidence in the hardiness of Erinacea pungens is strengthened by the statement regarding its hardiness by the late Mr. Farrer, who wrote of it as being hardy in the farthest north. What Mr. Farrer meant by "farthest north" is possibly a little indefinite, as it might only apply to the north of England, but there are many gardens in the north of England much more trying to plants than plenty of Scottish districts. Erinacea pungens is a charming plant, with its spiny foliage and pretty flowers, and the specimen figured in your illustration is evidently a splendid one. *S. Arnott.*

SOCIETIES.

WHITEHALL AND DISTRICT HORTICULTURAL.

The eighth annual show of the Whitehall and District Horticultural Society was held on the 25th and 26th ult., in Messrs. H. J. Packer and Co.'s Recreation Grounds. The display was by far the best yet held by the Society, and it was opened by the Lord Mayor of Bristol, who commented on the great advance the Society had made during the past eight years. There were 218 entries in the flower classes, 135 in the fruit classes, 928 of vegetables and 169 industrial exhibits, and in addition very fine displays were made by members of the horticultural trade.

The Cairns Cup awarded for the highest number of points gained in the members' classes was won by Mr. S. W. Pike, and the Blackmore and Langdon Silver Cup was won by Mr. T. Crawford. In the three group classes the chief awards were made to Mr. W. E. Bryant, Mr. H. Walker and Mr. H. Clarke respectively. Mr. A. J. Andrews was the most successful competitor for Roses; Mr. W. C. Welsford for Sweet Peas; Mr. A. Cole and Mr. H. Curtis for vegetables; Mr. T. H. Sams for flowers, and the Rt. Hon. G. A. Gibbs, M.P., for fruit.

The trade displays were numerous, extensive and beautiful, and in this section awards were made as follow:—Gold Medals to Messrs. Sutton and Sons, for flowers, fruits and vegetables; Messrs. Blackmore and Langdon, for Begonias and hardy flowers; Messrs. J. Cypher and Sons, for Orchids and stove and greenhouse plants; Mr. C. Wall, for Carnations; Mr. E. J. Hicks, for Roses; Messrs. A. J. Keeling and Sons, for Orchids; and Messrs. English and Sons, for Roses.

Silver Medals were awarded to Messrs. Lowe and Gibson, for Gladioli and Carnations; Messrs. Brown and Sons, for flowers, fruits and vegetables; Mr. R. J. Case, for Zonal Pelargoniums; Messrs. Davis and Co., for flowers and vegetables; Mr. H. Clarke, for Violas; Mr. R. Brown, for flowers and vegetables; Mr. J. Mattock, for Roses; the Avonweir Nurseries, for Carnations; Messrs. Dickson, Brown and Tait, for hardy flowers; Messrs. Rich and Co., for hardy flowers; Messrs. Daniels Bros., for Black Currants; Mr. N. E. Chaplin, for flowers and vegetables; Messrs. A. A. Walters and Sons, for hardy flowers; and Messrs. W. T. Payne and Sons, for Sweet Peas.

DEESIDE FIELD CLUB.

Favoured with delightful weather the members of this club, numbering over 160 in all, held their excursion to Ballaterach. The Marquis of Aberdeen and Temair, who was accompanied by the Marchioness, led the proceedings as president of the club. Included among those who attended were many distinguished members from London, while from the surrounding districts many leading residents were present. Ballaterach is famous on account of its associations with Lord Byron's boyhood. It was at this farmhouse the poet during the three summers of 1795, 1796, and 1797, spent his school holidays. Mr. J. D. Symon, London, an Aberdeen graduate, whose book *Byron in Perspective* was one of the events of this, the centenary year of the poet's death, gave a delightful paper on "Byron and Deeside, the Facts and the Legends." The spell that Deeside cast upon the imagination, its mountains, woods and waters, Byron thoroughly grasped. Indeed, the influence those beautiful scenes of nature had upon the poet was out of all proportion to the actual time he spent there, and, save for one problematic return visit, he left these scenes for ever when he was only nine years old. Mr. Symon proceeded to quote and examine Byron's references to Deeside, his notes to his poems, and his letters. The most romantic and characteristically Byronic association with Ballaterach was the poet's young love for Mary Robertson, the farmers's daughter. She was the Mary of whom Byron sung: "When I Roved a Young Highlander over the Heath." Tradition gave them the picture of a lively, amiable but rather mischievous boy, fond of fishing and of fiddling about in a wright's shop, to the detriment of the tools and turning lathe. So pronounced were these pranks, that a look-out was kept for his approach, and the shop door locked when he was seen. Byron's reminiscences of the Dee are entirely in keeping with the stream. The image of "Dee's Clear Wave" and "Thou Sweet Flowing Dee" haunted him as vividly as "Dark Lochnagar," "Morven of Snow," and "The Rocks that O'ershadow Colbleen." Byron ever had a wistful harking back to Deeside. At Cheltenham he tried to recapture the whole emotion of earlier years and scenes in contrast with the beauties of England "tame and domestic." That was the poet who "sighed for the valley of dark Lochnagar," and who later, and still further from home,

"Mixed Celtic Memories with the Phrygian
Mount,
And Highland linns with Castalie's clear
fount."

Byron came to Aberdeen when he was two years old; there he awoke to consciousness, and his experience was that of the Aberdeen boy, reared beside the Dee and within sight of the Grampians. He was a child of their countryside, loyalty to which became with him a passion. It is here Aberdonians have their closest touch with Byron. His love for the north was not a mere local accident, but a spiritual bond. A vote of thanks, carried by acclamation, was conveyed to Mr. Symon.

Lady MacRobert, B.Sc., F.G.S., F.Min. Soc. F.S.A. (Scot.), gave a most learned address on the problems of glacial phenomenon, particularly those touching upon chronological valuations, from a new standpoint. Deeside, especially in its upper reaches where the members were now gathered, was rich in deposits laid down during successive glacial periods, and in the course of her remarks she called attention to the features of the landscape which illustrated the various kinds of moraines and other formations caused by the action of ice. On the motion of Lord Aberdeen, Lady MacRobert was cordially thanked for her address.

A business meeting was thereafter held, when Mr. J. Bentley Philip, secretary, intimated further literary and pictorial contributions to *The Deeside Field* to be published in November; and Mr. A. MacDonald made an appeal to the meeting to authorise the formation of a committee for "ringing" birds, with Mr. J. W. MacKay as convener. Lady Aberdeen presented Mr. Dunn, now the farmer at Ballaterach, with a pair of silver jam spoons as a token of the club's appreciation of his kindness; and Lord Aberdeen called for thanks to all who had arranged so enjoyable an outing.

ROYAL CALEDONIAN HORTICULTURAL.

The ordinary monthly meeting of this society was held at 5, St. Andrew Square, Edinburgh, on August 5th, Mr. Robert Fife, president, in the chair. Sir George Watt, C.I.E., formerly Reporter on Economic Products to the Government of India, gave an account, illustrated by lantern slides, of some interesting experiments which he had carried out at the Crichton Institute, Dumfries, and elsewhere, on the big bud disease of the Black Currant, with a view to its eradication.

In March, 1922, a Black Currant plot

which was affected by the mite was burnt to the ground. A crop of young shoots, which showed no sign of mite, sprang up and there was a fine display of flowers presaging a good crop of fruits, but the latter completely failed to materialise. It was then discovered that every plant in the plot was affected by "Nettle-leaf" or "reversion," for which there is no cure. In this disease the typical foliage leaves, which are palmate, give place to leaves of the same character as those produced from the fruiting spurs, which are of the nettle-leaf type (as Sir George showed from photographs of wild specimens of the plant thrown on the screen), and in bushes propagated from plants so affected the disease is transmitted, and they, of course, fail to produce fruit. Big bud, Sir George said, was the forerunner of "reversion."

Photographs were also shown of the mite (of which there is a red as well as the more common white kind) and its work in the buds, the inflorescences of which it eats out, and then ascends the bud and escapes. Rain was mentioned as one of the chief methods of conveyance of the mite from bud to bud, the mites being washed from the leaves, on which they fall, into the grooves of the petioles, and thence to the buds in their axils. The employment of insecticides for the destruction of the mite was useless, as, being within the buds, the specific could not possibly reach them, but as a measure of control the use of lime and sulphur was to be commended. Firing the plants, as he had done in the Crichton Institute experiment, was the only cure, but there was the prospect of "reversion" afterwards.

A discussion followed. Mr. T. A. SCARLETT, a large market grower of Black Currant plants, mentioned that in the variety he grew, Edina, he had never seen big bud, but that a small percentage had sometimes shown "reversion." In this case, however, it has to be kept in view that a small number of mite-infested buds might easily escape detection, unless a very vigilant outlook was kept for them.

The exhibits were:—Pelargoniums by Messrs. DOBBIE AND CO. (Silver Medal); nineteen varieties of Sweet Peas by Miss BURTON, Polton (Silver Medal); Carnations by Mr. MASTERTON (Cultural Certificate); Rose Frau Karl Druschki, by Mr. R. B. WHITE (Cultural Certificate); Apples and Gooseberries, by Mr. GEORGE BALMER (Cultural Certificate for the Apples); Sweet Pea Rosy Morn, by Mr. ARNOT, Corstorphine; Althæa sp. by Mr. FORTUNE, Edinburgh; Veronicas by Miss BARTY, Edinburgh; Black Currants by Mr. T. A. SCARLETT. The three prizes offered by Miss Burton for a bunch of Sweet Peas were awarded as follows:—1, Mr. ARNOT, 2, Miss BARTY, 3, Miss COWIESON, Edinburgh.

ABERDEEN HORTICULTURAL.

CENTENARY SHOW.

AUGUST 14, 15, and 16.—The hundredth year reached by any society or organisation is always considered worthy of recognition, and the passage of a hundred years since the institution of the Royal Horticultural Society of Aberdeen was fittingly marked by the holding of an exceptionally good centenary show. Out of compliment to the occasion, the Scottish National Sweet Pea, Rose, and Carnation Society, held a smaller, but highly attractive provincial show, in conjunction with the Aberdeen Society. It proved a very happy and pleasing combination, and one greatly appreciated by visitors. H.H. the Princess Maud (Lady Maud Carnegie) opened the proceedings and presented the chief prizes.

Lord Provost Meff introduced Lady Maud, and on the platform were the Countess of Southesk (Lady Maud's mother-in-law), the Marquis and Marchioness of Aberdeen and Temair, Sir William Lawrence, Bt., and many other prominent people. The arrangements were admirably carried out by Mr. J. B. Rennett, the secretary, while Mr. John Smellie, Westwood Cottage, Helensburgh, played right well the leading part on behalf of the Scottish National Sweet Pea, Rose, and Carnation Society. As the shows were held quite apart, we may take the chief event—the centenary show—first, and proceed per schedule.

POT PLANTS.

Comprising twelve classes, the section for professional gardeners proved an outstanding one. For the best circular group of pot plants arranged for effect on the ground (not exceeding ten feet in diameter), Lady COWDRAY, Dunecht, Aberdeenshire (gr. Mr. William Smith), worthily gained first place with a delightfully arranged and well-grown group of plants, chiefly composed of Draceanas, Caladiums, Codiaeum, Ferns, Gloxinias and Coleus. The leading entry was very closely run by the second and third prize exhibits—Mr. ROBERT MURRAY, Enfield, and Mr. A. E. BENZIE, Morkeu, Cults (gr. Mr. William Henderson). Lady COWDRAY also took leading honours for Ferns, Gloxinias, and plants for dinner table decoration. Mr. A. E. BENZIE, Morkeu, won the chief prizes for Pelargoniums, Fuchsias, and Begonias. Enfield claimed chief place for double Begonias, while Colonel D. B. STEWART, Banchory House, Kincardineshire (gr. Mr. John Cameron) was first for Petunias. This section was deservedly admired.

CUT FLOWERS.

There were some thirty classes in this division for professionals, and the exhibits shown more than upheld the reputation of northern gardeners. The Silver Challenge Cup for the best eighteen Rose blooms, H.P. and H.T., or either, named, distinct varieties, was won by Colonel GILL, Dalhebity, the president of the Aberdeen Society (gr. Mr. A. Brebner), with an exquisite entry, including some of the best known varieties; second place went to Dunecht, and third to Balmedie (gr. Mr. R. Pirrie). Colonel GILL also took the leading prizes for decorative Roses, six vases of Roses, cut trusses of zonale Pelargoniums, and button-hole bouquets. Asters were well shown, leading awards going to Springhill (gr. Mr. D. L. Scorgie), who also won premier honours for twelve spikes of double Stocks, twelve fancy Pansies, six sprays of Violas and a basket of flowers. Mr. JOHN COUTTS, Woodhill, Aberdeen, led for hardy herbaceous flowers, for twenty distinct varieties of cut flowers and for fine foliage bedding plants. Begonias, double and single, were finely shown from Enfield, while Lady SEMPILL, Fintray House, Aberdeenshire (gr. Mr. W. D. Anderson), excelled for Chrysanthemums with fine entries. For Sweet Peas, Mr. JOHN A. GRIGOR, Duff House, Banff, has practically proved himself invincible this season. His fine performance at Glasgow on the 6th and 7th inst., when he won upwards of twenty-five first prizes, was repeated at Aberdeen. He was awarded leading position in all the Sweet Pea classes. This division also proved a great attraction.

FRUIT.

The soft fruits were the outstanding features in this division, and leading experts declared nothing finer could be found in the British Isles. Lady COWDRAY, Dunecht, had the finest collection of hardy fruit, six dishes, for which she gained the Veitch Memorial Medal and prize of £5, given by the Royal Horticultural Society (London) for the best exhibit of fruit, while she also led for Melons and Peaches. Great admiration was expressed for the exquisite specimens of Strawberries and Raspberries entered from Denmore, Aberdeenshire (gr. Mr. George Tocher). The Hogg Memorial Medal of the Royal Horticultural Society offered for Strawberries and Raspberries was awarded to Mr. TOCHER. Gooseberries were well shown, leading prizes going to the collections from Banchory House and Johnston House (gr. Mr. Norman M. Duncan). The best Cherries and Nectarines were shown from Logie, Pitcaple (gr. Mr. P. F. McQueen). Honours for Red Currants went to Balmedie, and the best Black Currants came from Logie.

Grapes were meagrely shown, but those sent from Cortes House, Lonmay (gr. Mr. W. K. Murray), and from Stoneywood House, Aberdeenshire (gr. Mr. George Meldrum), were very good. Springhill won leading place for Apples, while Aden House (gr. Mr. Alex. Murphy), secured all the awards for Pears. Mr. J. A. GRIGOR, Duff House, Banff, led for Tomatos.

VEGETABLES.

One always looks for a goood display of vegetables at Aberdeen, and there was no disappointment on this occasion. BANCHORY HOUSE sent forward the winning entry in the class for the best collection of vegetables arranged on a table space four feet by three feet, and comprising eleven varieties; and for a similar collection, open to market gardeners only, leading place went to Mr. J. A. GRIGOR, Duff House, Banff. Mr. Grigor, be it noted, does not confine his efforts to the growing of Sweet Peas. Some remarkably well grown and finely shaped Potatos were staged, leading awards going to Springhill, and Messrs. W. and B. LAWSON, Cornhill. Other exhibitors worthy of mention were Mr. D. L. Scorgie, for a basket of salads, Carrots, Cucumbers, and Beetroots; Mr. NORMAN M. DUNCAN for Cauliflowers and round and white Potatos; Mr. P. F. MCQUEEN, Logie, for Onions, Leeks, and Potatos.

NURSERYMEN AND FLORISTS.

A very fine division, if somewhat limited, was devoted to nurserymen and florists. Messrs. ADAM AND CRAIGMILE, Fernielea Nurseries, Aberdeen, gained the R.H.S. Challenge Silver Cup offered for the best thirty-six Rose blooms, with a remarkably fine entry, second prize going to their worthy opponents, Messrs. D. and W. CROLL, nurserymen, Dundee. Wreaths, floral designs, and decorative baskets of Roses, were capitally shown by Messrs. J. and R. BURNS. Mr. W. MUNRO, Aberdeen, also did remarkably well in this division, taking leading prizes for hand bouquets, etc.

NON-COMPETITIVE DISPLAYS.

A highly admired feature of the centenary celebration was the magnificent collections staged by the nursery and seed trade. Columns of the *Gardeners' Chronicle* could be filled describing these fine displays, but space will not permit more than the names of those who efforts were deeply appreciated by experts and ordinary visitors alike. Messrs. BEN. REID AND CO., GEORGE PEGLER AND CO., KNOWLES AND SONS, W. SMITH AND SONS, LTD., and M. H. SINCLAIR, all of Aberdeen. A special meed of praise is due to Messrs. DOBBIE AND CO., LTD., Edinburgh, for their most excellent and highly artistic display of Roses and other flowers. *Gold medals* were awarded to Messrs. DOBBIE AND CO., and to Messrs. ADAM AND CRAIGMILE, Aberdeen.

A smaller but highly attractive show was provided by the Scottish National Sweet Pea, Rose, and Carnation Society, which, in honour of the centenary celebrations, visited Aberdeen on this occasion. Mr. JOHN A. GRIGOR, Duff House, Banff, did splendidly in the Sweet Pea sections, but he did not by any means have it all his own way. Lady COWDRAY, Dunecht (gr. Mr. William Smith), had to be reckoned with. While Mr. GRIGOR gained leading places for twenty-four vases of Sweet Peas, distinct varieties, one vase of cream-pink, one vase of orange-crimson, and one vase of any other colour, Lady Cowdray had the best lavender, pink, and mauve specimens. Messrs. Torrance and Hopkins, Meadow Nursery, Busley, also put up a very fine display, taking first place for six vases, distinct varieties, novelties of 1924. In the division open to gardeners only, Mr. Grigor led, followed by Lady Cowdray. In the other classes for Sweet Peas, Mr. Grigor did well, but so also did the entries from Dunecht. In fact these were the two chief prize winners.

There were some exquisite specimens in the Rose classes, and they proved a source of great interest to the visitor. Here, again, Messrs. Adam and Craigmile, Aberdeen, had matters much their own way, taking leading honours in the classes for twenty-four blooms, distinct varieties, and for six vases, six distinct varieties. Messrs. D. and W. Croll, Dundee, made amends by taking the premier awards for baskets and vases of "decorative" Roses.

Mr. James Smith, Glendale, Darvel, secured the leading honours for twelve vases of Carnations and Picotees, distinct varieties, with a very fine entry, Messrs. Torrance and Hopkins following closely. In the perpetual-flowering division, Messrs. Torrance and Hopkins and Lady Cowdray divided the honours.

Amateur Classes.

At both shows the amateurs put up remarkably fine displays. At every point one heard expressions of warm appreciation of all that was shown in the amateur divisions.

SCOTTISH NATIONAL SWEET PEA, ROSE AND CARNATION.

August 6 and 7.—This section of the show was held in conjunction with the provincial exhibition of the National Rose Society at Glasgow on the above dates. It is generally admitted that the Sweet Peas put up for competition at this show are amongst the finest seen at any exhibition in Great Britain, and on the present occasion the flowers were of the usual high standard of excellence.

Sweet Peas, Open Classes.

The chief class in this section was for twenty-four vases, distinct varieties, and premier place was obtained by Mr. John A. Grigor, Duff House, Banff, who put up a group of clean, magnificently grown blooms in which we noted fine examples of Mrs. Tom Jones, Bunty, Fordhook Orange and R. F. Felton. Messrs. Torrance and Hopkins, Busley, came second. The first prize for twelve varieties was won by Mr. Charles Glass, Broomhill Gardens, Cardross; second, Messrs. W. Hamilton and Co., Belfast. Mr. John Smellie, Helensburgh, won first prize for six vases of the 1923 novelties with beautiful examples of Radiance, Cream Constance, Lucifer, Comrade, Charming, and Mrs. C. W. Unwin; second Mr. J. A. Grigor.

In the classes open to gardeners there was keen competition for the first place for nine vases. The awards were: Mr. John A. Grigor, first; Mr. John Loan, Coldstream, second; and the Viscountess Cowdry, Dunecht (gr. Mr. Wm. Smith), third. There are two classes for six vases in this section. In the first Mr. J. A. Grigor was supreme, followed by Mr. John Loan, and in the second Mr. Frank Dunbar, Kilmshaw Gardens, Cardross, gained first position, amongst his set being fine vases of Powerscourt Daffodil and Mrs. G. Shawyer.

In the gardeners and amateur section Mr. Grigor was again supreme. He gained first prizes for (a) six vases of distinct varieties; (b) six varieties introduced by Mr. G. Stevenson, (c) three vases distinct, and (d) three vases of novelties introduced by Mr. Woodcock. Mr. Grigor also won the Burpee Cup, and Mr. F. Dunbar was placed second.

There were thirteen classes for single vases and Mr. Grigor won twelve first prizes. The "Citizen" Cup for eighteen vases of distinct varieties was won by Mr. James Troup Row; the second place was taken by Messrs. Torrance and Hopkins. There were many classes for amateurs, all of which had fair entries.

Roses.

In the open classes Messrs. Thomas Smith and Sons, Stranraer, were first for two dozen blooms of distinct varieties, and they were also first prize winners for baskets of Roses. Messrs S. McGredy and Son, Portadown, won premier place for twelve vases of distinct sorts.

There was good competition in the class for twenty-four blooms in the amateur section. The order of merit was: first, Mr. J, McBrayne, Newton Mearns; second, Mr. J. E. Turner, Grenock; third, Mr. D. Murchison, Kevin. Other notable amateur winners were Mr. E. Penfold, Parton; Mr. W. Brown, Stewarton; Mr. James Kerr, Stewarton—who exhibited a lovely basket of Mrs. Henry Bowles—and Mr. Robert Miller, Dunbarton. Mr. John Russell, Newton Mearns, secured the prize for the best bloom in the show in the gardeners' and amateurs' classes with a bloom of Mrs. Foley Hobbs.

Carnations.

This section improves every year and some fine lots were staged at this show. Messrs. Torrance and Hopkins were first for twelve vases, distinct, and Mr. James Smith, Darvel, took the leading position for six vases, followed by Mr. A. McMillan, Cumnock, and Messrs. Torrance and Hopkins in the order named. There were many small classes for Border and Perpetual-flowering Carnations, all of which were productive of good entries.

Trade Exhibits.

Messrs. Dobbie and Co., Ltd., Edinburgh, put up a large exhibit of Roses, Collarette Dahlias and Sweet Peas (Large Gold Medal). Messrs. Austin and McAslan, Glasgow, staged a collection of Gladioli and Roses (Large Gold Medal). Messrs. Leightons, Glasgow, were responsible for a fine exhibit of Sweet Peas (Gold Medal). Messrs. Torrance and Hopkins, showed Carnations and Sweet Peas (Gold Medal). Mr. R. Lawrie, Carnwath, exhibited a collection of cut flowers of double Begonias, all seedlings (Gold Medal). Mr. Malcolm Campbell, Blantyre, put up a good collection of Border Carnations (Gold Medal). It will be noted from the awards that the trade exhibits were of a high order of merit.

SHROPSHIRE HORTICULTURAL.

August 20 and 21.—The Annual Shrewsbury Floral Fete draws many thousands of people to the ancient county town of Salop, and it was hoped that on this occasion fine weather would favour the Committee and so secure a record attendance to celebrate the Society's fiftieth year. Alas! for well-laid schemes. Delightful weather attended the early hours of the opening morning, but not long after the public were admitted—on the stroke of 10.30, the rain descended in floods and so made everything unpleasant. We hope the weather improved later in the day and also on the following day.

The show was a grand one, and the competitive groups of flowering and foliage plants, foliage plants only, hardy flowers, and Roses provided in themselves a magnificent display it would have been worth while going many miles to see. The general arrangements were good, as usual; finger post directed visitors to the different sections. Mr. Ward had a bright display in "The Dingle," and although judging did not commence until nearly half-an-hour after the appointed time, it was finished by the opening hour. We congratulate Mr. Brazier, the Secretary, the Officers and Committee on another great show carried out in good style.

In addition to the huge ridge and furrow tent which housed the principal part of the show, a separate tent was filled by the Educational Department of the Shropshire County Council with a large, interesting and educational exhibit, but alas! the tent was far removed from the great show tent, as though it was unwanted. Another tent was devoted to cottager's exhibits, and these were both numerous and good: we are glad to find the Shrewsbury Society continues to cater for the humbler horticulturists. Yet another tent was occupied by the ladies' table decoration displays.

The outstanding non-competitive exhibit was the one of vegetables from the Hon. Vicary Gibbs' gardens and some idea of its importance may be gathered from the following letter to the Committee:—

> "Gentlemen.—We the undersigned judges beg to recommend that some special recognition be accorded to the Hon. Vicary Gibbs for the truly wonderful exhibit of vegetables staged in his name by Mr. Edwin Beckett, V.M.H. This, in our opinion, is undoubtedly the finest exhibit of vegetables ever staged in this country. Signed, F. Lambert, R. Milner, Ben Ashton, J. G. Weston John Cypher, A. Mackellar, F. W. Fitch, N. F. Barnes.

Groups.

The two principal group classes provided a display which in itself would have sufficed to eclipse many an ordinary provincial show. At Shrewsbury there is sufficient space in front of these exhibits to permit of free inspection, provided the crowd is not too large.

A space of three hundred square feet is provided in the big class for a group of foliage and flowering plants arranged for effect and the premier award is £45; second, £35; 3rd, £25; and 4th, £15. There were four competitors, and once again the chief award fell to Messrs. J. Cypher and Sons, Cheltenham, for an exquisitely beautiful arrangement in which just that special touch of artistic genius was shown which arrests the eye of a judge. We need not elaborate upon the design as it had many features in common with other displays put up by the Cheltenham firm, but there was a dainty grace about the Humeas, Origanum, Odontoglossums, Cypripedium Maudiae and Liliums, that harmonised finely with the glowing colours of Codiaeums and Caladiums and the rich hues of Cattleyas and Laelio-Cattleyas. The second prize was well won by Mr. W. A. Holmes, Chesterfield, who was wonderfully successful in his use of very handsome Codiaeums, Francoa ramosa, Humeas, small Ixoras and the Golden Oncidium flexuosum. The third prize went to Sir G. H. Kendrick (gr. Mr. MacDonald), Whetstone, Edgbaston, Birmingham, for a fine exhibit and one that was extremely creditable as coming from a private establishment. Vanda teres Miss Joaquim was well shown in this group, as also were Gesneras, Epidendrums. Liliums, Codiaeums, Nandina domestica and two imposing Alocasias; the general effect was bright but a trifle lacking in elegance. Mr. W. R. Manning, Dudley, was awarded the fourth prize.

Next in importance among the group classes was the one for foliage plants only; here the space allowed was 250 sq. ft., and the prizes £35, £25, £20 and £10 respectively. There were four competitors and Sir G. Kendrick was awarded premier honours for a brilliant and pleasing exhibit in which superbly grown Codiaeums were the outstanding feature; the taller, drooping-leaved forms rising gracefully above broad-leaved forms, and the whole set in a ground work of Ferns, Rex Begonias, Nandina, small Caladiums, with a background composed of handsome Palms, graceful Bamboos and bold-leaved Anthuriums. Mr. W. A. Holmes was awarded second prize, and he also used finely grown broad-leaved Codiaeums with great effect; Messrs. J. Cypher and Sons had to be content with third prize, and Mr. W. R. Manning with fourth.

In the County class for a group of plants the first prize was easily won by A. M. Barber, Esq. (gr. Mr. F. A. Bremmell), Wellington, who used Liliums, Carnations, Hydrangeas, a few Orchids and suitable foliage plants to advantage; second, H. Howells, Esq., Shrewsbury.

Hardy Flowers.

Four grand groups of hardy flowers provided one of the most attractive features of a fine show The schedule specification was for a "Collection of Herbaceous Plants, Flowers, etc., foliage arranged in a natural manner, and to occupy a ground space of 250 sq. ft. (all greenhouse stuff excluded)." The prizes offered were £20, £15 and £10 respectively. First prize was won by Messrs. Gunn and Sons, Olton, with one of the grandest exhibits of hardy flowers we have ever seen. Notwithstanding the free use of such "strong" subjects as Lilium auratum, Kniphofia aloides, Gladioli and Hollyhock, there was a pleasing lightness in the general arrangement and this was secured by raising the aforementioned subjects well above the Phloxes, Scabious, Potentillas, Veronicas, Thalictrum, Astilbes, Helenium and most other kinds of flowers that are found in a well planned herbaceous border at this season of the year. Messrs. M. Prichard and Sons, Christchurch, gained second prize with a very fine collection which was a trifle flat as compared with the premier groups, although it probably contained a greater variety of subjects. Thalictrum dipterocarpum, Kniphofia nobilis var. Riverslea, Crinum Powelli, Lilium auratum, L. speciosum rubrum and L. s. album, were conspicuously good in the Christchurch group. Third prize went to Messrs. Bees, Ltd., Chester, for a fine effort, a trifle heavy in design and a little overweighted in the background; Yucca filamentosa, Kniphofia C. M. Prichard, Pyrethrum Firefly, Lilium Henryi and Astilbe Gruno (rose-pink), were fine in this display. Messrs. Gibson and Co., Bedale, were placed fourth.

Messrs. Bees, Ltd., had the satisfaction of winning the first prize for a "collection of Lilies and other bulbous plants" with a very bright exhibit wherein subjects of special interest were Lilium Henryi, L. Sargentae, L. auratum, Crinum Powellii, Gladiolus Willy Wigman, and Montbretias in variety; second Messrs. M. Prichard and Sons, who made a special feature of Montbretias, Liliums, and Galtonia candicans.

Mr. George Morton, Chester, led in the class for a dozen bunches of hardy and half-hardy annuals, and his set included Yellow Statice, Zinnias, Scabious, and Eschscholtzias in good form; second Col. T. Dickins, Loppington Hall (gr. Mr. G. Gilbert); third H. Watson Smith, Esq. (gr. Mr. H. Davis), Stourbridge.

Messrs. Harkness and Sons, Bedale, secured first prize for eighteen bunches of hardy flowers, distinct, and their outstanding bunches were of Kniphofia Royal Standard, Senecio Orange Queen, Sidelcea Elsie Heugh, Lilium tigrinum, and Gaillardia Mrs. Mackellar; second, Messrs. Bees, Ltd.; third, Messrs. M. Prichard and Sons.

Plants.

Messrs. J. Cypher and Sons led for fifteen specimens stove and greenhouse plants with fine examples of Statice intermedia, Dracaena Victoria and Acalypha hispida; second, Mr. W. R. Manning.

In the class for a group of Begonias, Messrs. Blackmore and Langdon, Bath, were supreme with a magnificent exhibit of fine varieties represented by grandly grown plants carrying glorious flowers; second. Mr. H. Woolman, Shirley, Birmingham.

Six competitors each showed six tuberous-rooted Begonias, and the best set was shown by A. M. Barber, Esq.; these were excellent plants, large, clean and freely flowered; second, T. Hammonds, Esq., Shrewsbury; third, H. Fielding, Esq. (gr. Mr. E. Reynolds), Marshbrook.

Although falling far short of the grand specimens of many years ago, the Pelargoniums were good on this occasion. H. Howells, Esq., showed the best half-dozen plants and they were about a yard across and well flowered; second, C. Clift, Esq., Shrewsbury; third, C. C. Wace, Esq., Shrewsbury. Miss R. Humphreys, Shrewsbury, was the most successful exhibitor of Gloxinias and showed a good set of a dozen plants.

H. Howells, Esq., was particularly successful in the Fuchsia and Pelargonium classes open only to residents in Shropshire.

Florists' Flowers.

There was one entrant only in the class for a big group of flowers of perpetual-flowering Carnations; this was from Mr. C. Engelmann, Saffron Walden, and it was a fine effort, the well-grown flowers being disposed pleasingly in baskets and vases; the baskets of White Pearl, Laddie, Maine Sunshine, Tarzan and Saffron were particularly good. The first prize in this class carried with it the Annabelle Lady Boughey Challenge Cup, value fifty guineas, and as Mr. Engelmann won this in 1922 and 1923, and now again in 1924, the handsome trophy becomes his property.

Mr. H. Woolman, Shirley, won first place for a group of Dahlias; his flowers, chiefly of Cactus varieties, were wonderfully fresh and bright, and set off by the use of double Gypsophila in the flower stands; the flowers were disposed in ten columnar arrangements, one in groundwork of Single Pompon, double and Collarette varieties; second, Mr. H. Clarke, Taunton. Mr. Woolman also won first prize for a small group of Carnations.

Mr. A. S. Dunton, Wolverhampton, was the only exhibitor in the class for a display of Sweet Peas, and he won with an effective display, consisting of twenty-one baskets of blooms; the varieties Royal Scot, Elegance, and Powerscourt were outstandingly good—the premier prize was awarded.

There were no fewer than ten competitors in the class for six vases of Sweet Peas, distinct varieties, but the the judges had no difficulty in awarding first prize to Mrs. Arthur Bradbury (gr. Mr. H. E. Shaw), Llandudno, for splendid flowers and spikes of Royal Scot, Elegance, R. F. Felton, Tangerine Improved, Warrior, and Mrs. Arnold Hitchcock second, L. Robinson, Esq. (gr. Mr. G. Frowen), Kington; third, Mr. R. Madeley Market Drayton.

Seven exhibitors came forward in the class for a dozen vases of Sweet Peas, distinct, and here the chief honour fell to Mr. G. Rondles, Wrexham, for good blooms of Hebe, Austin Frederick, George Shawyer, May Cowdy, Edna May, King Manoel, Mrs. C. W. J. Unwin, Matchless, Royal Scot, Charity, Cecily, and Climax; second, Mr. R. Madeley; third, Mrs. E. M. Weaver, Mold.

The best set of a dozen vases of Asters was shown by Gen. Pitcairn Campbell (gr. E. Griffith), Bangor-on-Dee, and it was noticeable for the rich colours it contained; second, A. H. Hickman, Esq., Cookley; third, F. Edge, Esq., Bicton Heath.

The Open Champion Class for Roses attracted five competitors. The space allowed was twenty feet by four feet and the chief prize was the Silver Cup offered by the President, Lord Sandon, the Society's Large Gold Medal and £10. This omnibus award was won by Messrs. Gunn and Sons, Olton, with a grand display in which the prominent feature were the tall and slightly arching pillars of blooms of Independence Day, Sovereign, K. of K., Mabel Morse, Los Angeles, George Dickson, Betty Uprichard, and William F. Dreer. Below these were baskets of Emma Wright, H. V. Machin, Mrs. Dickson Hammil, and many other excellent varieties; second, Mr. T. Robinson, Nottingham; third, Messrs. Bees, Ltd.

Mr. J. Mattock was first prize winner in the class for three baskets of Roses.—Golden Emblem, Irish Elegance and Mrs. Henry Bowles; second, Messrs. Gunn and Sons; third, Messrs. Vickers. For garden Roses, eighteen varieties, in bunches. Messrs. Gunn and Sons were again the most successful exhibitors; second, Mr. J. Mattock, Headington, Oxford.

Gladioli were very freely shown and the chief awards for a group of these flowers were granted to Mr. J. Watson, Prees, Salop; and Messrs. Bees, Ltd., respectively.

Floral Designs.

Mr. A. Adshead, Gatley, showed the best basket of cut flowers—a gorgeous arrangement of Cattleya Dowiana aurea, Odontoglossum grande, and Apricot-hued Carnations, associated with Asparagus plumosus and Nephrolepis fronds; second, Mrs. J. Nixon, Alderley Edge, whose brilliant exhibit contained golden Richardias and scarlet Anthurium spathes; third, Mr. C. Vickers, Leicester. Mr. C. Vickers secured the first prize for three bouquets, two composed of mauve and purple Orchids, and the other—the bride's—made of white Cattleyas and Odontoglossums; second, Mr. A. Adshead. who used Sweet Peas effectively with Orchids; third, Mrs. Nixon. The last named competitor led in the class for a bowl of flowers, with Gerberas pleasingly arranged.

Decorated Dessert Table.

The Shrewsbury Tradesmen's Cup and £25 offered as first prize for a decorated dessert fruit table was won by the Duke of Newcastle (gr. Mr. Barker), Clumber, with a grand exhibit decorated with blush Carnations and Francoa ramosa. The subjects shown were Madresfield Court, Muscat Hamburgh, Canon Hall Muscat and Madresfield Court Grapes; Durondeau, Triomphe de Vienne, Dr. Jules Guyot Pears; Beauty of Bath, Cox's Orange Pippin and James Grieve Apples; Ringleader and Universal Favourite Melons: Lord Napier, Dryden and Humboldt Nectarines; Royal George, Peregrine and Dymond Peaches; Brown Turkey Figs and Jefferson Plums. Owing to the way in which the two tables were arranged and the double enclosure of wire netting it was not possible to determine the dishes on the inner or far side of the tables, hence it would be useless to give the pointing as set forth on the judging card without full identification of each individual dish. Mr. Barker obtained 209 points. We suggest in future that the possible maximum points should also be stated on the judging card for comparison with the points secured. Lord Belper (gr. M. J. McCartney), Derby, won the second prize with a total of 163 points; his Grapes were fine bunches. To the above modest criticism we would add another—the tables are altogether too small for the proper display of thirty dishes of fruit, and the tables should be placed "end on" so that every dish may be seen.

Grapes.

The best exhibit in the important class for a dozen bunches of Grapes was the one from the Pwll-y-Crochan Hotel Co. (gr. Mr. W. Owen), Colwyn Bay. His set was a capital one and the whole of the bunches were of remarkably even size and quality. The varieties were Muscat of Alexandria (four bunches), Madresfield Court (four bunches), Mrs. Pince, Alicante and Black Hamburgh (two bunches). The bunches were well berried and of fine shape, but how Mr. Owen came to leave one bad berry in his right hand bunch of Black Hamburgh will probably remain a mystery to himself, as it was to his friends. Sweet Peas, Clarkias and Carnations were used to decorate the exhibit.

Second prize went to the DUKE OF NEWCASTLE (gr. Mr. Barker), whose bunches carried grand berries but were somewhat uneven in size and form; third, Messrs. J. WEBBER AND SONS, Minehead; fourth, R. J. CORBETT, Esq. (gr. Mr. J. Jones), Towyn; fifth, W. H. FLUCKETT, Esq. (gr. Mr. J. Irvine), Grimsby. This class provided an excellent display and constituted the feature of the fruit classes.

THE EARL OF LICHFIELD (gr. Mr. G. Smith), Shugborough Hall, had the finest four bunches of Grapes—Madresfield Court and Muscat of Alexandria in excellent condition and of good weight; second the EARL OF COVENTRY (gr. Mr. W. H. Wilson), Croome Court, with Muscat of Alexandria and Black Hamburgh in good condition; third, Col. H. C. LEGH (gr. Mr. A. J. Cook) Knutsford. The EARL OF COVENTRY led for a pair of Black Hamburgh Grapes, bunches with heavy shoulders; second, Messrs. J. WEBBER AND SONS.

CHOICE FRUITS.

Messrs. J. WEBBER AND SONS, Minehead, were the only exhibitors in the class for twelve dishes of dessert fruits and they were awarded the first prize; their set consisted of Muscat of Alexandria and Black Hamburgh Grapes, Dryden Nectarines, Early Crawford and Dr. Hogg Peaches, William's Bon Chrètien Pears, Beauty of Bath Apples, Belle de Louvain Plums, White Currants; a pair of Melons and a very fine dish of Morello Cherries.

In the smaller class for nine dishes of fruit, Capt. W. W. HAYNES (gr. Mr. T. Maddock), Harcourt, led with good examples of Royal George Peach, Muscat of Alexandria and Black Hamburgh Grapes, Early Rivers and Pine Apple Nectarines, Doyenné du Comice Pears, Beauty of Bath Apples and a dish of Plums; second, Capt. HEYWOOD LONSDALE.

There were five entries for a dish of Nectarines and the chief award fell to W. M. CURZON HERRICK, Esq. (gr. Mr. J. J. Staward), Loughborough, for fine specimens of Spencer. From nine competitors R. J. CORBETT, Esq., scored for Peaches, with large fruits of Sea Eagle. T. F. Kynnersley, Esq. (gr. Mr. Phillips), Leighton Hall, Trowbridge, lead for Apricots, and J. BARKER, Esq. had the best scarlet-fleshed Melon. THE DUKE OF NEWCASTLE showed the finest Plums (Jefferson); and Mrs. F. MADDOCK, Caernarvon, the best Morello Cherries.

HARDY FRUITS.

Prizes in the class for six dishes of hardy fruits, open only to the county of Salop, were well contested but A. H. HEBER PERCY, Esq. (gr. Mr. W. R Catt), Hodnet Hall, was a good first with Gooseberries, Black Currants (very fine), Baumforth's Seedling Raspberries, Morello Cherries, Gascoyne's Scarlet Apples, and the Czar Plums—*The Gardeners' Chronicle* Silver-gilt Medal was awarded to this exhibit; second Col. J. DICKIN (gr. Mr. G. Gilbert), Loppington; third, Col. HEYWOOD LONSDALE.

Other successful competitors in other fruit classes were A. H. HEBER PERCY, Esq., the EARL OF LICHFIELD, Col. MELLOR (gr. Mr. C. Price), Abergele—fine Muscat of Alexandria Grapes; Col. DICKIN, J. BARKER, Esq., Mrs. LETHBRIDGE (gr. Mr. J. Eccleshall), Little Ness; Col. HEYWOOD LONSDALE, Mr. J. B. DAVIES, and the EARL OF COVENTRY.

VEGETABLES.

One tent was devoted to vegetables and owing to the lack of ventilation it was not a pleasant place to remain in during the wet opening morning. The vegetables were exceptionally good, as on the whole the season has been favourable to them.

Mr. JOHN JONES, Annesford, was again very successful and he succeeded in winning first prize for a collection of twelve distinct kinds with superb examples of Prizetaker Leeks, Early Giant Cauliflower, Sutton's Prize Pink Celery, Ailsa Craig Onions, Everyday Cucumber, Tender and True Parsnips, New Intermediate Carrots, Sutton's Black Beet, King Edward VII Potatos, Best of All Tomatos, Sutton's V.C. Peas and enormous Best of All Runner Beans; second, VISCOUNT HAMBLEDON (gr. Mr. W. Turnham), Henley-on-Thames; third, Rev. J. DAVIES, Crowle.

In Messrs. SUTTON AND SONS class for nine kinds Mr. T. M. JONES, Llandilo, led, showing very large bulbs of Ailsa Craig Onions and capital V.C. Peas. In Messrs. DICKSON AND ROBINSON's class for nine kinds, premier place was occupied by Viscount HAMBLEDON. C. J. GWYER, Esq, (gr. Mr. H. Sowman) Eywood Hall led in the Clibran's class for nine kinds, while in Messrs. J. CARTER AND CO.'s class Mr. W. TAYLOR, Grinshill, was a good first prize winner.

Other successful competitors in the vegetable classes were A. H. HICKMAN, Esq., Stourbridge; H. WATSON SMITH, Esq., Stourbridge; W. ROBINSON, ESQ., Garstang; Col. HEYWOOD LONSDALE; W. TAYLOR, Esq.; W. TAYLOR, Esq.; G. DICKS, Esq., and J. WAINWRIGHT, Esq.

Splendid produce was shown in the numerous single dish classes: Peas, Runner Beans, Turnips, Cauliflowers, Tomatos, Celery, Carrots, Parsnips and of course Potatos,, were shown finely and in very large numbers both in the open and the local classes.

NON-COMPETITIVE.

The non-competitive exhibits were once again a very fine feature of the exhibition and it is quite impossible within the limits of our space to deal with them all in detail. Of special interest was the exceedingly fine exhibit of vegetables staged by the Hon. VICARY GIBBS (gr. Mr. E. Beckett), Aldenham House, Elstree; even for an Aldenham exhibit it was a superb one and that is saying a great deal. Everything was splendidly grown and the arrangement was at once attractive and brilliant, indeed it has remained for Mr. Beckett to show that vegetables may make almost effective a group —even in point of colour—as plants and flowers. Another unusual display was the rock garden from Mr. CLARENCE ELLIOTT; in this he depended almost entirely upon Conifers for his planting subjects and, needless to state Mr. Elliott made good use of columnar Junipers, the spreading Savin, variegated Retinisporas, dwarf Pines and graceful Cypress—a fox peeping from a hole between rocks, under a Savin provided a touch of quaintness. Mr. Barker's extensive rock and water-garden also deserves special mention for its weeping Willow and tufts of Astilbes.

Awards were made as follows:—

Special Jubilee Silver Cups.—To Messrs. BAKERS, for a rock and water garden; Hon. VICARY GIBBS, for a collection of vegetables; Messrs. R. F. FELTON, LTD., for floral designs; King's Acre Nursery Co., for fruit trees in pots; Messrs. J. PEED & SON, for Caladiums and greenhouse plants; and Messrs. E. WEBB AND SONS, for a collection of fruits, vegetables and flowers.

Large Gold Medal.—To Messrs. DOBBIE AND CO., for Dahlias and Roses; Messrs. DICKSON AND ROBINSON, for Gladioli and vegetables; Mr. CLARENCE ELLIOTT, for rock garden; Messrs. JARMAN AND CO., for flowers and vegetables; and Messrs. EDWIN MURRELL, for Roses.

Gold Medal.—To Messrs. ROBERT BOLTON AND SONS, for Sweet Peas; Messrs. ISAAC HOUSE AND SON, for Scabious and Phloxes; Messrs. HEWITT AND CO., for Gladioli and Delphiniums; Messrs. STUART LOW AND CO., for Orchids and Carnations; and to Messrs. VICKERS, Leicester, for floral designs.

Silver Medal.—To Messrs. BLACKMORE AND LANGDON for Delphiniums and Phloxes; Mr. E. E. BAYLEY, for miscellaneous groups; Mr. W. ARTINDALE AND SONS, for hardy flowers; Mr. H. Clarke, Taunton, for Larkspurs; to Mr. H. A. ELLISON, for Ferns; to Messrs FAIRBAIRN AND SON, for hardy flowers; to Messrs. JONES BROS. (Shrewsbury), for Carnations; to Messrs. J. JONES AND CO., for Violas, Scabious and Pansies; to Mr J. K. KING AND SONS, for Sweet Peas; to Messrs. PRICHARD AND SON (Shrewsbury), for Alpine plants; to Miss THOMSON, Handsworth for Cacti; to Messrs. TOOGOOD AND SON, for flowers and vegetables: to Messrs. VERT AND SON, for Hollyhocks, to Mr. WELLS, Junr., for hardy flowers; to Mr. COPE, Birmingham, for floral designs; and to Messrs. FORBES, Hawick, for hardy flowers.

Obituary.

John Dunn.—It is with great regret we record the death of Mr. John Dunn, foreman in the kitchen garden department at the Royal Gardens, Frogmore, Windsor. He died in King Edward VII. Hospital, Windsor, on Saturday evening, the 16th inst., following an operation. Mr. Dunn was a master craftsman in his particular branch of gardening and was also a good all-round cultivator. He was a valuable contributor to our pages and wrote the weekly calendar on The Kitchen Garden in 1910, 1913, 1915, 1917 and other years. Mr. Dunn was greatly esteemed by his colleagues at Frogmore and by all who had the pleasure of his acquaintance, for he was possessed of an agreeable personality and a kindly disposition. He was buried at Windsor Cemetery on Thursday, the 21st inst.

THE LATE MR. JOHN DUNN.

ANSWERS TO CORRESPONDENTS.

NAMES OF PLANTS: *North Riding.* We do not undertake the naming of Roses; send specimens to a Rose specialist. *M. J. P.* Lysimachia vulgaris. *A. M., Newcastle-on-Tyne.* Spiraea Douglasii. *B. B.* 1, Helenium pumilum; 2, Veronica spicata; 3, Linaria vulgaris; 4, Saponaria officinalis. *Gypso.* 1, Asclepias curassavica; 2, Astragalus purpureus (?); 3, Pittosporum Mayi. *C. H. P.* Tamarix aestivalis. *A. J. P.* 1, Ceanothus Gloire de Versailles: 2, Euonymus latifolius variegatus; 3, Rosa rugosa; 4, Mahonia aquifolia; 5, Berberis vulgaris; 6, Contoneaster horizontalis; 7, Cotoneaster frigida; 8, Betonica spicata; 9, send when in flower; 10, Cupressus Lawsoniana; 11, Thuja dolobrata; 12, Picea excelsa. *X. Y. Z.* 1, Syringa species (?); 2, Fuchsia procumbens. *G. E. M.* 1 and 4, Buphthalmum salicifolium; 2, Helenium autumnale; 3, H. pumulum; 5, Œnothera fruticosa; 6, Senecio saracenicus; 7, Cistus incanus. *T. S.* Origanum Majorana. *Merthyr.* Pelargonium echinatum. *G. F.* We do not undertake to name florists' flowers; send to some grower who makes a speciality of Carnations.

Communications Received.—J. B.—W. J.—P. W. B. —J. E.—H. C.—J. B.—W. B.—T. S.—D. A.—F. B. (Thanks for 5s. for R.G.O.F. Box)—W. D.

THE
Gardeners' Chronicle

No. 1966—*SATURDAY, AUGUST* 30, 1924

CONTENTS.

Alpine garden—
  Some rock plants of summer 144
Antirrhinum diseases, notes on some ... 150
Annuals for greenhouse and conservatory decoration 147
Books notices of—
  Text-Book of Pomology 144
Bulb garden—
  Colchicum 143
Canada, importation of plants to 142
Cranfield, Mr. W. B. 142
Essay competition for Lea Valley employés 141
Fruit crops, remarks on the condition of the 153
Fruit garden, the market 152
Glasgow flower show 142
Hardy flower border—
  Chrysogonum virginianum 143
  Eryngiums 143
Imperial Botanical Conference 152
Indoor plants—
  Bignonia Cherere ... 145
Leaves, the contribution of dying, to the plant 141
Orchid notes and gleanings—
  A Cypripedium puzzle 145
  Stauropsis lissochiloides 145
Rose garden, the—
  Rose Margaret Dickson and its white rivals 149
  Rose Zephirine Drouhin 149
R.H.S. Fruit and Vegetable show 141
Societies—
  Banffshire Horticultural 157
  Royal Horticultural... 154
  Northampton Horticultural 157
  Southport Floral Fête 156
  United Horticultural Benefit & Provident 155
Ward's, Mr. F. Kingdon, eighth expedition in Asia 148
Week's Work, the ... 146

ILLUSTRATIONS.

Antirrhinum diseases 150, 151
Cranfield, Mr. W. B., portrait of 142
Godetia Lavender, a pot plant of 147
Roses: John Russell, 149; Mrs. Barraclough ... 145
Sweet Peas exhibited at the Aberdeen Centenary show 143
Vegetables exhibited by the Hon. Vicary Gibbs at Shrewsbury show 153

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 59·1.

Actual Temperature:—
Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 27. 10 a.m.: Bar. 30·1.: temp. 60°. Weather, Dull.

The Contribution of Dying Leaves to the Plant.

Whoever studies the processes which go on in plants is impressed with the economy which the parts exercise in the interests of the whole. As is well known, the leaves of green plants are the factories in which are manufactured the food-materials which serve to nourish all living plants. Day by day in sunshine the leaves produce from the raw materials which they receive from soil and air the sugars and nitrogenous substances which supply to the cells of plants, no less than the cells of animals, the materials for growth, multiplication, activity and repair. Each morning the task of distribution of sugars carried on incessantly throughout the night finds itself as near as may be completed. And hence it is that a leaf gathered in the early hours of the morning contains less dry matter than one of equal size contains at evening time after the day's manufacturing work is done. What is true of the relatively simple sugars is also true of the more complex nitrogen-containing food materials. They are manufactured from elementary substances during the day and distributed to all the young parts of the plant continuously. And so the work of the plant never ceases throughout day and night. Then there comes a time when in this climate of alternating seasons the leaves begin to lose activity, wither, turn yellow or brown, and presently fall. As they lose their summer vigour the manufacturing activity of the leaf, which is bound up with the presence of green colouring matter in its cells, declines and before the leaf falls it is a dried and dead thing no longer making daily contribution to the sustenance of the plant. Yet, as recent investigations* have demonstrated, before a tree parts with a leaf it yields to the plant which bears it much of the residual food material which it made and stored before autumnal old age brought the leaf's activities to a standstill. Of the sugar-like materials contained in the leaf just beginning to turn yellow only about a quarter migrates into the stems and roots; half of the total carbohydrate contents of the just withering leaf remain in it and go to enrich the soil with humus when the leaf falls and decays; the remaining quarter is consumed—burned up to supply the declining energies of the dying leaf. Sugars and similar carbohydrates are lightly come by in the green plant, and "lightly come, lightly go." The loss of the small quantity which falls with the dying leaf is of small moment to the plant. It is otherwise, however, with the nitrogenous food-materials manufactured by the leaf. Nitrogen in a form which the green plant can use is scarce in nature and the green plant is as niggardly in its use of nitrogen as it is extravagant in its use of sugars and carbohydrates. Mr. Combes has shown, for example, that in the case of Sycamore and Chestnut no less than half of the total quantity of nitrogenous materials contained in the leaf is handed back by it as a dying legacy to the stem and root. In the Beech, Horse Chestnut, and Spanish Chestnut the removal of residual nitrogenous materials from the leaf about to fall is even more complete, and often no more than one-third of the quantity present when the leaf began to assume its autumnal state remains in the withered and fallen leaf. So little do we know of the essential details of plant life that it cannot yet be said why the leaf of any of our deciduous trees is made to die with the onset of winter. Its richness in carbohydrate shows that it does not die of starvation. The final act in the recurrent drama of the fall of the leaf may be ushered in by the formation of a "cutting-off" layer of cork which arises in the petiole and checks the ascent of water to it. But the first act is unknown. What causes the leaf, erstwhile in full vigour and activity, to begin with the year to wane and what leads to its self amputation still escape the knowledge of plant physiologists. The phenomena is so common that it does not excite wonder, yet every falling leaf carries with it to its grave on the ground, a mystery which those who delight in discovering nature's ways would give much to penetrate. Needless to say the material contained in the fallen leaves is not wholly lost to the plant. As the leaves decay much of their substance is converted again into the simple compounds from which that substance was manufactured; but some leaves decay only partially and give rise to humus from which fungi and non-green plants derive sustenance and from which also the tree from which the leaves fell does not disdain to draw upon for its further nutriment. Knowing this the gardener takes care to collect all available fallen leaves and to compost them, for in these days of shortage of stable manure leaf-mould—always precious to the cultivator—has become of very great value in the garden. It is a mistaken practice to burn the waste vegetable debris of the garden. All of it, if properly composted, helps to maintain the fertility of the soil; entering once again into the bodies of new generations of plants it continues the endless migration from the inorganic to the organic world and back again to the inorganic world.

Sugar Beet Growing in Northern Scotland.—This season for the first time Sugar Beet has been grown on a commercial scale in northern Scotland. Morayshire farmers have taken up the growing of this crop with enthusiasm, and, judging by the plants, the results of their labours are likely to turn out profitably. The deep, loamy soils of Morayshire seem especially congenial to the Sugar Beet, and on these soils the crop meantime looks perfection. If a subsidy was granted for the growing of Sugar Beet there is not the slightest doubt but that the area under this crop in Morayshire would be very considerably increased.

Essay Competition for Lea Valley Employes.—To encourage enterprise and a spirit of camaraderie in the British glasshouse fruit-growing industry, employers and employees are taking part in a novel competition aimed to develop the industry. The competition, which has been promoted by the Lea Valley Growers' Association, offers prizes to the employer or to the employee who (1) sends in the best mechanical device or contrivance for use in the industry or (2) writes the best essay dealing with some phase of the industry and its development. Nearly five thousand men are engaged in glasshouse work in the Lea Valley district alone, and as the competition is being entered into with a good deal of friendly rivalry between employers and their men, it is hoped that the results will be of permanent value to the industry as a whole. Entries for this unique competition close on September 29.

A New American Sweet Pea.—Messrs. W. Atlee Burpee Co., the well known Sweet Pea raisers of Philadelphia, have sent particulars of their newest introduction. The variety is named Sunshine and the colouring is rich pink with a deep Primrose blotch at the base of the standard petal, the reverse side of which is flushed with yellowish amber. The keel is suffused with lemon-yellow. The large flowers are of excellent form, being well waved and crinkled, and are borne in fours on long, strong stems. It is claimed that Sunshine makes a magnificent bunch, the colour being most exquisite both by day and under artificial light.

R.H.S. Fruit and Vegetable Show.—The special fruit and vegetable show of the Royal Horticultural Society will be held in the Vincent Square Hall, Westminster, on October 7th and 8th. It will be remembered that last year these special shows were held in conjunction with the autumn exhibition at Holland Park Hall, but the Council has wisely divorced them from that show, as many considered they did not receive such prominence as they deserve. For several years these special exhibitions have attracted fewer and fewer competitors, doubtless because of the shortage of labour in gardens and the increased expense in bringing large exhibits to London from the country. On this occasion the prizes have been greatly enhanced and in some cases doubled; thus in the class for a collection of twelve distinct kinds of vegetables the sum of £10 is offered as the first prize, together with the Sutton Cup, as compared with £5 and the Sutton Cup last year. The prize for a collection of Potatos has been raised from £3 to £5, and for six Onions the first prize is £3 instead of £2, with a corresponding increase in the second and third prizes. In the fruit classes the prize money has also been increased considerably. In both the classes for collections of ripe dessert fruit the prizes are enhanced, and they are doubled in the class for six distinct varieties of Grapes, the prizes in this class being a Silver Hogg Medal and £10, £7 10s. and £5 respectively, compared with a Silver Hogg Medal and £5, £4, and £3 last year. The greatest increase is in the class for a collection of thirty dishes of hardy fruit staged in a space not exceeding twelve feet by three feet, for whereas last year the first prize was a Silver Hogg Medal and £2 and the second prize £2, this year the first prize is a Silver Hogg Medal and £15, the second prize £10 and the third prize £5. These very liberal prizes should attract a keen competition in this class. In the classes open to gardeners and amateurs only for fruits grown entirely in the open air, the prizes are in many of the classes doubled and in some cases more than doubled. Thus for twenty-four distinct sorts of Apples the money prize is £10 as compared with £3. The special county classes, which at one time resulted in excellent competition, have attracted only a few exhibits in recent years, but now that the prizes are enhanced it is to be hoped that many more growers will compete. The division for dessert and culinary Apples open only to amateurs possessing a total of not more than twenty-five Apple trees has been eliminated from the schedule. There are the usual classes for single dishes af Apples and Pears in which the prizes are raised from 7/-, 5/- and 4/- respectively to £1, 15/- and 10/-.

---

* *Migration des substances azotées pendant le jaunissement des feuilles des arbres.* By R. Combes. Bulletin de la Societie Botanique de France. Vol. 71 (4th series, Vol. 24), 1924.

Royal Lancashire Show.—Messrs. Dickson and Robinson inform us that they were awarded two Gold Medals at the Royal Lancashire Show (see p. 120), the Gold Medal of the Royal Lancashire Show and that of the Royal Botanical Society of Manchester.

Glasgow Flower Show.—We learn from the Secretary that excellent progress is being made with all the details of this exhibition, which promises to be one of the finest ever held in Scotland. The entries for the various competitive classes are well up to, if not over, last year's total, which was a record one for the show. The figures so far indicate a total entry of over four thousand. The opening ceremony will be performed by the Duchess of York and a large and distinguished company of ladies and gentlemen will assist at the function. The show will continue for four days. A formal flower garden will be laid out on a lawn, decorated with annual flowers, by the Glasgow Corporation Parks Department under the supervision of Mr. Edward Matthews, Director of Parks.

Appointment.—Mr. Frederick Baker has been appointed Superintendent of the Portsmouth Public Parks. For the past four years he was Superintendent of the Public Parks at Wigan and previously was for eight years on the staff of the Cardiff Parks under Mr. W. W. Pettigrew and his brother, Mr. A. A. Pettigrew, who succeeded him.

Importation of Plants into Canada.—The Ministry of Agriculture and Fisheries desires to inform exporters of plants that the Canadian Authorities have issued an Order which comes into force on October 1, 1924, prohibiting the importation of merchandise packed in hay, straw, or other fodder, from all countries other than the United States. Exporters should, therefore, arrange to use other forms of packing material for any consignments to be sent to Canada.

Gardeners' Royal Benevolent Institution.—The Prince of Wales has promised to preside at the 79th Annual Festival Dinner in aid of the funds of the Gardeners' Royal Benevolent Institution on November 25th next. It is hoped to make the occasion a record one and we appeal especially to gardeners to give their support to this admirable gardening charity.

Mr. W. B. Cranfield.—Mr. W. B. Cranfield is known, at least by name, to most horticulturists in Great Britain, for he is one of the keenest of amateur gardeners and has gained many awards for new plants and numerous prizes for exhibits. He is especially interested in Auriculas, Ferns, Daffodils, trees and shrubs, and hardy border flowers. His exhibits of Auriculas shown before the war gained many prizes at exhibitions in London and the north, but his collection was lost during the time of the war when, like other growers, he found it impossible to give the necessary time and attention to the plants. He is a very enthusiastic grower and raiser of Daffodils, and many of his novelties have received awards at the Royal Horticultural Society's meetings and also at the shows of the Midland Daffodil Society. His interest in British Ferns is well known. His garden at Enfield Chase contains the finest collection of hardy Ferns in the country; his enthusiasm for Ferns has stimulated interest in others for these most beautiful plants. The Royal Horticultural Society is indebted to him for a very rich collection of Ferns, which are planted in a woodland glade of the wild garden at Wisley. Mr. Cranfield has found and raised many fine varieties of British Ferns and has received numerous awards for these plants from the Floral Committee of the Royal Horticultural Society, many of the best sorts in cultivation having originated from his collection. He has also a very choice collection of flowering shrubs and hardy herbaceous plants, many of them being of his own raising, and we may especially refer to his fine strain of Foxgloves, which is one of the best in cultivation. Mr. Cranfield has been a member of the Floral Committee and the Narcissus and Tulip Committee of the Royal Horticultural Society for many years and he is nearly always present at the meetings. He is president of the British Pteriodological Society, and his election to that office during the present month marks the sixth year in succession of his presidency. Mr. Cranfield is a man of fine physique, tall and athletic, and in his younger days he was prominent in the world of sport, winning prizes for running, walking, and rowing. At one time, and until he was rather badly injured in the field, he was a keen rider to hounds. He is a member of the Enfield Chase Stag Hounds and won the members' heavyweight races on several occasions, as well as many of the open races of the adjoining hunts. He is by profession a surveyor and auctioneer, being senior partner in the firm of Messrs. W. E. Foster and Cranfield. He is a past master of the Horners' Company. Mr. Cranfield is also a member of the Horticultural Club, and no one has taken a greater interest in that old horticultural institution or done more to help restore it to its former condition of importance than this enthusiastic horticulturist, who is one of the kindest of men and a gentleman whom it is a privilege to know.

MR. W. B. CRANFIELD.

Centenary of Royal Horticultural Society of Aberdeen.—Much water has flowed beneath the bridges since the far-off days when the first show of this society—then known as the Aberdeenshire Horticultural Society—was held in a small hall in an Aberdeen inn. Slowly but surely, however, the gallant band of enthusiasts persevered in their propaganda work, and in 1843 the banqueting hall of the County Rooms, Aberdeen, was chosen as the show place. The members were not idle, for in those days so many as five shows were held in the course of a year. Encouragement, too, was given for essays on horticultural subjects. Some sixty years ago the society became the Royal Horticultural Society of Aberdeen, and in 1869 welcomed back to its fold the Aberdeen Hortus Club, which had a few years previously broken away from the parent. Since then matters have proceeded pleasantly and smoothly. With the acquirement of the estate of Balmoral, and the erection of Balmoral Castle by Queen Victoria, the Royal Family were regarded as neighbours, and very soon Queen Victoria evinced a kindly interest in the Aberdeen Society and its work, and presented prizes for competition annually. King Edward VII, as Prince of Wales, became patron of the united organisation, and continued his kindly interest in it right to the end. It was his niece, H.H. Princess Maud (Lady Maud Carnegie), who opened the centenary show on Thursday, August 14. How well this worthy society has progressed down the years, may be better expressed by the eulogy passed upon what he saw at the centenary show by Sir William Lawrence, Bt., treasurer of the Royal Horticultural Society, London, who, along with Mr. C. T. Musgrave, ex-treasurer; Mr. William Cuthbertson, a member of council; and Mr. W. R. Dykes, secretary, came as a visiting deputation in honour of the centenary celebrations. Sir William declared the Sweet Peas were finer in colour than even at the big show in the R.H.S. Hall; Roses were as good—perhaps better in colour—than any they had seen in the south. There was one feature of the show, however, which they could not repeat in the south of England, namely, the very fine Strawberries and Raspberries.

Appointments for the Ensuing Week.—Tuesday, September 2: Great Flower Show in conjunction with the Glasgow and West of Scotland Horticultural Society's exhibition in Kelvin Hall, Glasgow (4 days); Newcastle Flower Show (3 days); Royal Caledonian Horticultural Society's meeting; Croydon and District Horticultural Society's meeting. Wednesday, September 3: Littlehampton and District Horticultural Society's show; Royal Agricultural Society's meeting; Morley and District Paxton Society's meeting. Friday, September 5: Manchester and North of England Orchid Society's meeting; Alloa Flower show (2 days); Cleland Flower show. Saturday, September 6: Falkirk Horticultural Society's show; Cambusnethan Flower show; Dalkeith Flower show; Duns Flower show; Dalrymple Flower show; Southend and District Horticultural Society's Flower show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Growing Orchids from Seeds.*—Within the last five years seedlings of the following Orchid species have been raised in the Orchid-house at Glasnevin, namely, Epidendrum elongatum and crassifolium, Cattleya

Forbesii, and Phaius albus, the seeds of which all vegetate freely. The manner of sowing the seeds and treating the young seedlings has been to allow the fine, dust-like seed to fall from the ovaries as soon as they show symptoms of ripeness, which is readily known by the ovaries bursting open on one side. When this takes place, they are either taken from the plant and shaken gently over the surfaces of the other Orchid pots, on the loose material used for growing them in, or on pots prepared for the purpose, after which, constant shade, a steady, high temperature, with abundance of moisture, are all requisites which are absolutely necessary to insure success. In the course of eight or nine days after sowing, the seeds, which at first had the appearance of a fine white powder, begin to assume a darker colour to the naked eye, and if looked at with a Coddington, or even a simple lens, evident signs of approaching vegetation may be perceived, which increase until the protrusion of the young radicle and cotyledon takes place, which varies from a fortnight to three weeks. From this period of their growth the young plants grow rapidly and the rootlets lay hold of whatever material is supplied to them. If the seeds happen either accidentally or intentionally to be made to vegetate on bare wood, as in some instances has been the case here, the young roots extend themselves in different directions, adhering closely to the bark, and make great progress compared with the growth of the stems, thus affording beautiful examples of the manner in which epiphytical plants fix themselves so firmly on the highest boughs of lofty trees in tropical forests, as well as accounting for the isolated positions they frequently occupy in their natural state. *D. Moore, Glasnevin, Dublin. Gard. Chron., September* 1, 1849.

Publications Received.—*Commercial Strawberry Culture.* By J. W. Morton; *Commercial Cucumber Culture.* By the Lea Valley Correspondent of *The Fruit Grower.* Ernest Benn, Ltd., 8, Bouverie Street, E.C. 4. Price 2s. 6d. each net.

HARDY FLOWER BORDER.

CHRYSOGONUM VIRGINIANUM.

The excellent illustration of Chrysogonum virginianum in *Gard. Chron.*, Aug. 16 (p. 107), should serve to make this hardy little perennial more general in gardens. It is, as your note indicates, a plant of considerable value, one of its merits being its early flowering.

I would ask those who try C. virginianum not to be disappointed with its appearance when it flowers on the small plants frequently received from a nursery. I have known disappointment to be expressed with such small plants and have found it necessary to advise complainers to exercise patience. A small plant is of little effect, but it increases quickly and, in a year or two experience will show that it is more worthy of being grown than its first appearance would suggest.

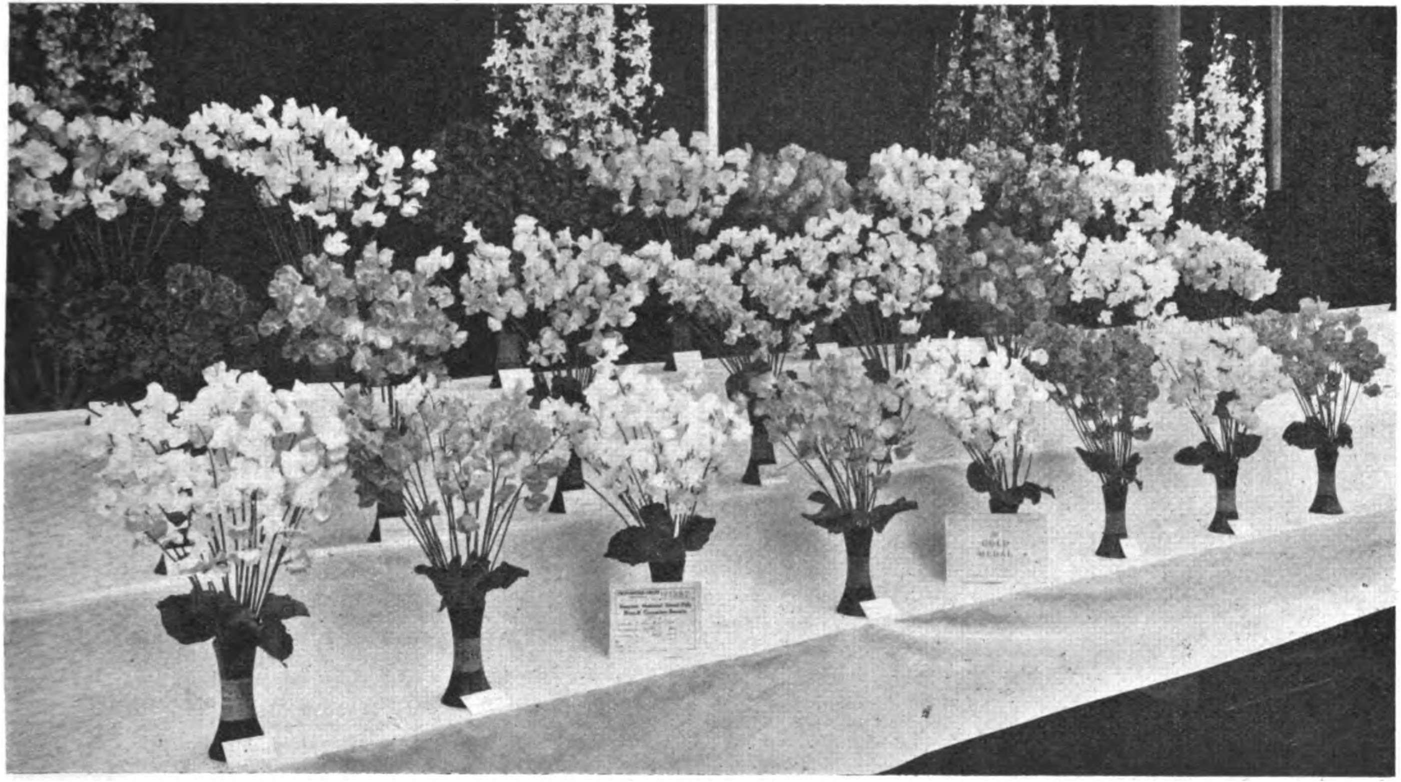


FIG. 47.—SWEET PEAS EXHIBITED BY MR. JOHN A. GRIGOR, AT ABERDEEN HORTICULTURAL SOCIETY'S CENTENARY SHOW, FOR WHICH THE R.H.S. GOLD MEDAL WAS AWARDED (see p. 137.)

Apart from its early blooming, it has the great merit of flowering over a long period. In its native country, the U.S.A., it grows in dry soil, and is only from three inches to a foot or so high. In this country I have usually seen it from six inches to twelve inches. It is amenable to adapting itself to other conditions than those under which it grows in its habitat, and I have seen it succeeding and flowering well in a moist situation. But I do not think it advisable to encourage too free growth, as the plant looks better when only a few inches high, the flowers then being more in proportion to its small size.

ERYNGIUMS.

Mr. W. Logan, in his interesting note on the Eryngiums (p. 107), made a good estimate of the respective values of the best of these plants for gardens. Two of those to which he refers—E. agavaefolium and E. pandanifolium—are not so hardy as the others, and in the north many growers have experienced difficulty in cultivating them successfully. This is unfortunate, as they are truly noble plants for the garden, their sub-tropical effect, referred to by Mr. Logan, being excellent indeed, and gives character to the places they adorn. It seems a pity that the Eryngiums are not more widely grown, as, although, by no means scarce in some districts, they are almost absent from others. *S. Arnott.*

BULB GARDEN.

COLCHICUM.

The gay, Crocus-like flowers of the Meadow Saffrons lend a charm to the autumnal garden when the "sear and yellow leaf" heralds in the approach of winter. Banks, bays, grassy mounds, herbaceous borders and rockeries may be made rich in effect by planting clumps of six to twelve bulbs or corms of Colchicum autumnale from three to six inches apart. Each bulb will produce from six to eight rose-purple flowers, of Crocus-like formation. C. autumnale plenum bears large, double flowers of similar colour, and is very effective; C. autumnale album has medium-sized, pure white flowers; C. a. album plenum, large and handsome double snow-white flowers, and is exceedingly effective in gardens.

Of other species C. Bornmuelleri, C. byzantinum and C. giganteum are each worthy of inclusion in beds or borders; they have large, rose-coloured flowers.

The varieties of Colchium speciosum are perhaps the most effective of all, having large flowers which are produced in abundance; C. speciosum rubrum is a brilliant carmine-rose variety and very attractive, while C. speciosum album has large, goblet-shaped, snow-white flowers of the most exquisite form; this variety should be included in all collections of autumn-flowering bulbs.

In planting Colchicums it is all-important that they should not be planted too deeply, a depth of from three to four inches being quite sufficient. The best time for planting is during August and September. Choose well-drained but fairly moist soil. Lifting and transplanting the bulbs every third or fourth year is desirable. *W. Logan.*

NOTICES OF BOOKS.

Pomology.

Gradually the underlying physiological and chemical reasons for the success of orchard practices are being revealed by experiment; and theory based on scientific research is taking the place of the fanciful theories of the older writers and gardeners. In America research in fruit-growing is of longer standing than in this country; so the student who wishes to learn all he can of this subject cannot omit the study of American experimental work. In a book just issued* the author, who is horticulturist to the Ohio Agricultural Experiment Station, has collected into convenient form for students many of the experimental results that have been accumulating rfom year to year. The volume forms an admirable text-book of the science on which present-day practices in fruit-growing are based. There are sections which have no application in this country, but the greater part of the book can be studied with advantage.

The formation of fruit buds is found to be chiefly a matter of balance between nitrogen and sometimes moisture in the soil and the reserve of carbohydrates stored within the tree itself. Thus a tree may be "over vegetative" and unfruitful because of an excess of nitrogen in relation to the stored carbohydrates, in which case withholding manure, possibly grassing down, and lighter pruning may prove a remedy. On the other hand, a tree may be barren because of a lack of nitrogen and moisture in relation to the amount of stored carbohydrates. In this case better cultivation, nitrogenous manuring, and harder pruning will usually prove to be a prompt remedy. In other words, if we can maintain a moderate amount of growth by the skilful use of manuring, cultivation and pruning, we stand the best chance of regular crops.

The biennial bearing habit, formerly considered to be an immutable varietal characteristic, is now regarded as a nutritional problem. This conception is necessary because there is no generally biennial-bearing commercial variety which has not become, in some instance, annual bearing through cultural means; but the same treatment has not brought about annual bearing in all orchards of the same variety. It would appear, therefore, to be largely a local problem. One investigator has pointed out that there is a close relationship between fruit-bud formation and spur growth. He found that, in the case of Apple Wealthy, fruit buds are formed freely when the spurs make a growth of one-eighth to three-eighths of an inch in length; and when growth is much less or greater, flowering is partially or entirely suppressed. In the "off" year, when eighty-five to ninety per cent. of the spurs form fruit-buds, this amount of growth is common; but in the "on" year it is consistently shorter, thus producing a cycle or a biennial bearing condition. An early application of nitrogen when the trees are fruiting heavily is one of the remedies suggested.

Experiments in pruning in America, as in this country, have proved that light pruning - thinning out rather than heading back—makes for fruitfulness, though both operations have their special uses. Trees that are headed back, we are informed, make a strong development of new shoots, mostly on the outside and top of the tree and, as a result, the spurs on the inside suffer and become non-productive; if, indeed, they do not die. Thinning out, on the other hand, tends to strengthen the spurs already formed as well as to develop new ones.

There is plenty of experimental evidence that thinning fruit increases the size of the remainder; but there is no reliable evidence that it overcomes biennial bearing. Fruit-bud differentiation starts too early in the season to be influenced by thinning of the crop.

A great deal of work on the manuring of fruit trees has been done in America. There have been some cases in which fertilisers have been used over a period of years without showing any result at all, as at the Woburn Experimental Farm in this country; but in many other cases good returns have been secured, particularly from the use of nitrogenous fertilisers, which are generally the first to be needed. Phosphates are valued less for their direct result than the improvement of cover crops or grass under the trees, and the same may be said of lime. Potash often gives no results. However, complete mixtures are generally advised, at any rate after the first few years, during which nitrogen may be the only requirement. In contrast to our practice, mineral fertilisers are preferred to organic materials like bone meal, meat meal, etc. Farmyard manure has given excellent results in several of the experiments mentioned, but seems to be regarded as slow in action. The general practice in grass orchards, whether grazed or mulched with the mown herbage, is to apply the fertilisers just as the bloom is ready to open. In tilled orchards they are given after the first working in spring, so that they become mixed with the surface soil early in the growing season. *M. G.*

ALPINE GARDEN.

SOME ROCK PLANTS OF SUMMER.

So lavishly does spring furnish the rock garden with colour that one is apt to think that there will be little left to accompany the summer. But the Pinks and Campanulas alone will do much to set at rest any anxiety that may be felt in that direction. Here the soil is so gritty and the slopes so steep that both Pinks and Campanulas are largely used for covering ledges as well as the low retaining walls which support them. In the first week of July, Dianthus neglectus was just about at its best, having arrived to take the place, as it were, of D. Spencer Bickham which, though the flowers are smaller, is an even more vivid shade of pink than the former. D. Russell Prichard is also a fine rock Pink of the same class, and among the monspessulanus and neglectus hybrids are some very gay little plants of great diversity and charm. The variety E. H. Jenkins, is very nearly equal in splendour to the old Caesar's Mantle which seems to be approaching extinction; it is quite one of the best subjects of its kind grown here, and its mongrel offspring are often exceedingly pretty. D. Napoleon III. constantly has to be renewed by fresh stock, it being one that does not enjoy our thin, hot soil, though plenty of old cow manure helps it. But that it is worth replacing every year or so is sufficient testimony as to its merits. Why this fine old blood crimson Pink should be so "miffy" when others of the hybridus set are among the most robust of the race and all season bloomers it is difficult to explain. D. superbus, in various shades of lilac and degrees of shagginess, is always fragrant, delightful and floriferous, even in sunless spots.

Then there is among other old ones a small-flowered, long-stemmed Pink, very sweet-scented, with firm, dead white blossoms, which we should not like to be without. This, I believe, is called Little Dove, or some such name, and two other charming white Pinks are D. arvernensis alba and a very finely-fringed, fragrant little plant which is probably a form of D. squarrosus. D. Old Rose and the not less old and more brilliant D. Atkinsonii only need healthier constitutions, both having seen better days. But the tall D. Wolley-Dod is still a hearty doer and one of the best of the old-time singles. Fettes Mount is another of the well-tried kinds and one that will make a huge sheaf of clear, bright rose, and I cannot pass over the merits of the true old Cheddar Pink and the comparatively new Gladys Cranfield, whose very large, single flowers with daintily-cut edges are a good rosy-pink with a bold central zone of blood crimson. This last has an admirable habit and sound constitution.

In contrast to the masses of colour afforded by the Dianthuses is the pure white of Astragalus hypoglottis alba and the delicate purity of Linum salsoloides. L. monogynum, even whiter and more leafy, is also a good Flax for a dry, warm place, whilst among the blues, of which L. narbonense stands supreme in stature and depth of colour, is the almost prostrate L. alpinum and the very dwarf and dainty L. collinum.

Pre-eminent among yellow subjects are L. arboreum, L. flavum and L. capitatum. But these do not enjoy our sun-beaten terraces better than Onosma taurica, and the singularly lovely O. alba rosea.

Among the later bloomers of the genus Oxalis, O. floribunda at its best is still without a rival, and its variety alba is worthy of something more than a passing notice since it flowers persistently from early spring to late autumn. O. obliqua is now very handsome in leaf and flower, but it is much too vigorous and spreading for the rock garden in any district which is not likely to be visited by a frost kindly enough to decimate its numerous progeny. Very curious in leaf and elegant in flower is the pale shell-pink O. vespertilionis, but since this is a Mexican plant it is probably too tender for most places.

From the neat and squat Armeria alpina and caespitosa to the stately ranks of Bees' Ruby and other giants, the Sea Pinks give us endless shades of pink and rosy-crimson. If Thymus Serpyllum coccineum has no rival in its gorgeous mats of royal purple the pure white form is a cool and pleasant object to contemplate on a hot day. T. S. micans is also a pretty plant among the later kinds of the more bushy species and T. azoricus is more uncommon than it deserves to be. T. ericaefolius, the silver form of T. citriodorus and the white-flowered T. carnosus together help to take the place of the beautiful spring-blooming T. nitidus.

Verbena radicans, which is much hardier than is generally supposed, bears all through the summer its clusters of lilac flowers, and the intensely brilliant scarlet of V. chamaedrifolia is not likely to be overlooked. Stachys coccinea, which must not be placed too near the dazzling colour of the last mentioned, will make a clump of soft, shrimpy-red which is an effective and uncommon tint if happily placed, and among other rock garden labiates of note are the Scutellarias. S. Brittonii, with flowers, unusually large for its race, in pale violet and white, is one of the most striking, and another first-rate species is S. alpinum, with conspicuous whorls of rosy-purple and white.

An uncommon note of colour is afforded by Primula suffrutescens, a sub-shrubby species from the Central Rockies, which holds above its sprawling branches, tufted with leathery green leaves, loose clusters of flowers in so bright and full a rose, centred with a golden eye, that they suggest those of Primula rosea. Potentilla nepalense Willmottiae ,never loses the attractiveness which its cherry-crimson, jet-eyed blossoms and neat habit have earned for it. Indeed, it seems to hold the same relative position among its kind as Geranium lancastriense has secured among the larger members of its family. The modest P. Tonguei is also a winning little plant, the apricot-buff and crimson of its flower being an unusual combination.

---

* *Text-Book of Pomology.* By J. H. Gourley, M.S. Edited by L. H. Bailey. 380 pp. Illustrated. London: Macmillan & Co. Price 12s. net.

Of the mid-season Pentstemons, P. heterophyllus easily holds the field; a batch of plants that survived the winter, flowered finely this summer and their sheeny, opalescent bugles made a very gorgeous display. Eriophyllum caespitosum is a yellow-flowered American composite with an attractive silver-grey foliage, a useful plant for a dry spot, and another golden Daisy after the same style is Chrysopsis villosa Rutteri. Achillea Kellereri is among these, and still holding its own with the golden Yarrows is A. tomentosa and its fine variety King Edward, which bears large sulphur-yellow flowers. Of the Asters, A. Pattersonii, Lipski and Thomsonii nana are some of the most satisfactory of their class with us. As for A. Farreri, this proud, shaggy-headed, redundant Tibetan species which makes a strong appeal to all whose leanings are towards the species rather than the hybrid, and the same is true of A. yunnanense.

A square yard of wall occupied by Lithospermum intermedium, with Veronica chathamica trailing into the latter from above, both plants in full bloom, was very lovely. With a similar root-hold, but a good deal drier, Campanula raddeana is rapidly usurping an even greater space, there being no heartier plant in the genus than this big-belled, deep-purple alpine.

Conspicuous among others at this season are such well-tried Campanulas as the various members of the garganica section, the splendid old C. muralis in several forms, adorable little C. pumila in shades of azure and white, C. Elatines starred with clear blue, the always refined and well-bred C. arvatica and C. Bellardii Miranda, very comely in a pale, smoky-grey. These and many others, including the elegant C. macrorrhiza, our own Harebell, and many an unclassified hybrid or form of the latter will furnish colour and grace in the rock-garden for many weeks in summer. *Cambria.*

ORCHID NOTES AND GLEANINGS.

STAUROPSIS LISSOCHILOIDES.

UNDER its more familiar name, Vanda Batemanii, Lindl. (*Bot. Mag.*, 1846, t. 59), Messrs. Armstrong and Brown, Orchidhurst, Tunbridge Wells, send flowers of this rare and stately species taken from a perfect specimen having ten pairs of leaves and a grand spike of twenty-two flowers.

The flowers are nearly three inches across, and very firm in substance; the sepals and petals are nearly equal, ovate, oblong, yellow and closely spotted with claret-red, the reverse side being bright purple. The lip is fleshy, three-lobed, beak-like, purple in front, the erected side lobes being whitish with purple markings. The thick, greenish ovary is twisted and ribbed, the fleshy column white freckled with purple.

The chief records of this Orchid are from the Philippines. The first information (as Fieldia lissochiloides) was given by Gaudichaud who found it on trees and rocks in one of the Moluccas. It was sent home by Cuming from the Philippines in 1841 and first flowered with Mr. Bateman at Biddulph Grange, Staffordshire, in 1846.

A CYPRIPEDIUM PUZZLE.

THERE is a section of Cypripedium of very moderate floral beauty, with some variation, but very little botanical difference in the flowers, although the leaves of the forms from different localities vary much in their dark green markings. All those who have studied them have been doubtful of them being species, and consequently take refuge by regarding them as natural hybrids, but without being able to suggest parentage. I suspect them to be variations of one type which is distributed either sparsely or plentifully in Siam, Borneo and the regions beyond. Cypripedium Bullenianum, Reichb. f., in *Bot. Zeit.*, 1865, p. 99, imported by Messrs. Low from Borneo appears to have been the first comer. In the *Index Kewensis* it is placed as a synonym of C. Hookerae, which has been discredited, for the plant has since been imported from other localities with still more marked differences from C. Hookerae. C. Bullenianum Appletonianum, Rolfe, *Orchid Review*, I, p. 135 (C. Appletonianum, Gower) recognises the standing of C. Bullenianum.

C. callosum sublaeve, Reichb. F., *Gard. Chron.*, 1888, 1, p. 331, is an unfortunate name, for it is not a form of C. callosum, but is identical with forms of those previously enumerated. C. siamense, Rolfe., *Gard. Chron.*, February 8, 1890, p. 161, and other reference is admittedly given to the preceding.

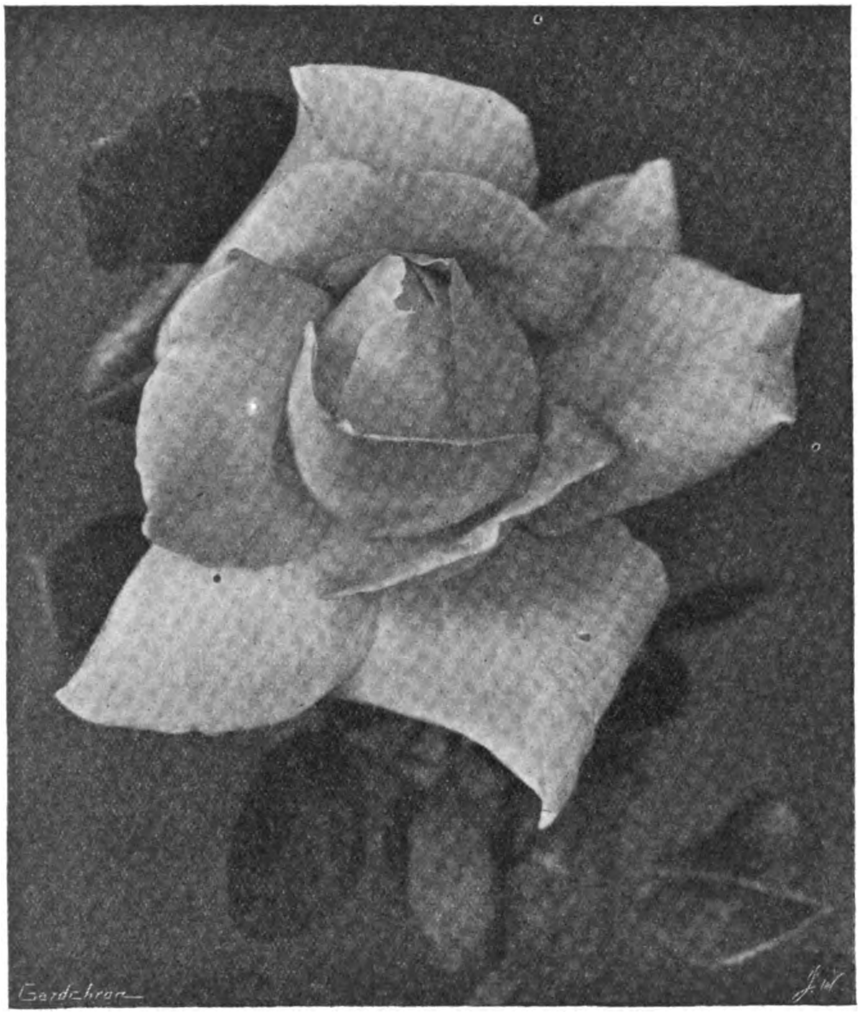


FIG. 48.—ROSE MRS. BARRACLOUGH.
N.R.S. Gold Medal, August 6 (see p. 120.)

C. Poyntzianum, O'Brien in *Gard. Chron.*, January 13, 1894, p. 36, is my contribution to the muddle, being based on a plant I saw at Messrs. Reginald Young's at Liverpool, imported with C. callosum. C. O'Brienianum Pereira was sent by Mr. Pereira of Singapore direct to Messrs. Stevens' Auction Rooms, Covent Garden, in quantity and splendid condition. The leaves of this plant are larger and more deeply coloured than those of the others, and although showing some slight variation in the flowers, affords conclusive evidence that it is a species and only a variation of the C. Bullenianum type.

C. Wolterianum, Kränzlin, *Gard. Chron.*, 1895, I, p. 166, and Xenia III is certainly one of the above set. C. papuanum, Ridley, *Gard. Chron.*, 1915, with illustration, although said to come from a widely separated locality, if I may give an opinion after seeing the plant in flower in the late Mr. C. Rothschild's collection, suggests a variation of those enumerated, although the dorsal sepal is broader and bears more resemblance to C. siamese, which would not be growing in its habitat. I refer these notes to the consideration of others, and especially the name those which are identical botanically should be placed under. By priority C. Bullenianum has the best claim. *J. O'B.*

INDOOR PLANTS.

BIGNONIA CHERERE.

FEW climbing plants are better adapted to a large conservatory than Bignonia Cherere. The large, orange-scarlet, trumpet-shaped flowers are produced throughout the summer in the greatest profusion and are a very notable ornament in a sufficiently large house.

The plant grows best in a house having an intermediate temperature, although I have known it to grow luxuriantly and to produce its flowers freely in a cool house.

The rapidity and density of growth of this plant render it quite unsuitable for planting in other than large structures.

It may be propagated from cuttings made from young, stiff, lateral growths during the early summer.

This Bignonia rarely succeeds as a pot plant and should be planted in a border in peat and loam with ample drainage.

A member of a very large order of tropical climbers, Bignonia Cherere was introduced from Guiana in 1824. *Ralph E. Arnold, Cirencester Park Gardens, Cirencester, Gloucestershire.*

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Catasetum, Mormodes and Cycnoches.—Plants of these genera which have bloomed or completed their growth should be removed from the warmest house to a cooler one, where they may receive more air during the hottest part of the day. The roots should be supplied with water whilst the foliage remains green, but after the leaves have fallen, and the growth is fully matured, very little water will be needed, and the plants should be given a long season of rest in a dry, sunny position in a house having an intermediate temperature.

Pleiones.—The various members of this genera will now be completing their season's growth, and should be afforded more light and air, and given just sufficient water at the roots to keep the compost moist and the pseudo-bulbs plump until the leaves fall. When this occurs, and until the flower buds again appear, water will be needed in very limited quantities.

General Remarks. The weather at the time of writing is dull and cold so that it has been necessary to use the heating system to provide a little extra warmth during the night in the East Indian House in order to promote a genial atmosphere. The night temperature in this division should be kept as near as possible to 70°, and the bottom ventilators should be left open a little whenever the weather conditions permit. A genial atmosphere, favourable to growth, should be maintained at all times in this and all other divisions. Judicious watering, shading, ventilating and the general damping of the houses should be given every attention. At this period cleanliness is equally important and, as little re-potting will be required, all spare time should be devoted to cleansing the plants, pots and their general surroundings. Watering at this season needs very careful attention as the plants are in different stages of development, some being in full growth and others have been recently re-potted, whilst still others are well rooted and at rest. These various conditions should be taken into consideration. Plants which are well rooted, and making rapid and vigorous growth, may receive liberal supplies of water at the roots, while newly potted plants and those that have not yet commenced to grow should have water applied with great care. In either case it is wise to ascertain that the compost has become somewhat dry before water is applied. Orchids as a general rule develop roots much more freely when the soil is moderately dry than when it is in a saturated condition.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Lawns.—The season for renovating lawns, or, where necessary, making new ones is upon us, for, generally speaking, much better results are obtained from sowing grass seed in early September than in the spring, when it frequently happens that the young plants have not been able to acquire sufficient stamina to endure an early summer drought. Lawns which have become patchy through wear should have the bare places lightly pricked over and receive a dressing of rich compost free from weed seeds; the whole should then be levelled and consolidated. A fine, friable surface is essential to ensure favourable conditions for the seed, but it is equally important that the under soil should be uniformly firm, hence repeated rakings and rollings should be carried out in every direction until a perfect seed-bed is obtained. When the preparation of the ground is completed sow the seed thickly and evenly, then roll the whole area sown lightly to cover as much of the seed as possible firming the soil carefully in each direction. Seed sown under favourable conditions in early September while the ground is still warm germinates quickly and the young grasses establish themselves, make up well before winter sets in, and with careful treatment produce a good turf during the following summer. Where good turf can be obtained renovations on a small scale may be carried out by re-turfing, in which case the work should be done later in the year. The cost of turf is, however, so high, that the re-turfing of lawns on a large scale is almost impossible, and seed-sowing is invariably practised.

Violas.—Although Violas may easily be raised from seed, where large stocks of named varieties are needed propagation by cuttings is the methods usually adopted. The present is a good time to commence the work, but it is important to choose strong, young growths from the base of the plants. If these are not sufficiently advanced a number of the old plants should be trimmed right back to encourage the throwing up of these young basal growths. They may be inserted in sandy compost either in boxes and stood in a cold frame or directly into prepared beds in a cold frame. As soon as rooted they should be fully exposed until required for planting out.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Strawberry Beds.—If it is desired to retain the plants in the permanent beds for another season, cut off all runners, also any dead or unsightly foliage. After the straw has been removed weeds between the rows should be hoed up and raked off. The litter will be useful for lightening heavy ground and should be dug or trenched in. The soil should be lightly turned up with the point of the fork if desired, but on no account should the roots of the plants be disturbed, otherwise the latter may die if the winter is cold and wet. Beds that have been down three years should be destroyed, as there is nothing gained by retaining old stock. Runners that may develop on newly planted beds should be cut off and the soil stirred with the hoe to promote healthy growth and destroy weeds.

Trees with Heavy Crops.—All trees bearing heavy crops of fruit will benefit by a little extra feeding, and there is nothing better for the purpose than diluted liquid manure. Peaches and Nectarines on walls are especially benefited by this stimulant as they rarely get sufficient moisture, but, if trees in the open have been mulched, the rains will have washed the nutriment down to the roots, and thereby assist them to finish their crops well. The present is a suitable time to re-label any trees that require it, and also determine where fresh trees are wanted.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Midsummer Peaches and Nectarines.—Early opportunity should be taken to remove the old fruiting wood from trees that have been cleared of fruit. This will greatly facilitate the ripening of this year's growth that will be retained for next season's fruiting and will also allow the sun and air to enter the tree more freely. When taking out the old fruiting shoots care must be exercised not to damage the foliage, for at this stage the leaves are quite green and are easily damaged by rough treatment. The buds need to be matured and any damage caused to the foliage will be reflected in next season's crop. In removing the old fruiting wood, cut out any superfluous growths and tie the remaining shoots loosely to the wires. After the trees have been dealt with as advised, carefully note if red spider or any other pest is in evidence, and if so spray the trees with an insecticide recommended for the particular pest. If the trees are clean I do not advise too much syringing after this date. The border should never be allowed to become dry, and where trees have been cropped heavily, copious supplies of liquid manure will prove beneficial to them, but in this case the grower should use his discretion. Trees that have been planted recently and are showing no signs of exhaustion through carrying a crop should not be given too much liquid manure. Admit air to the house both day and night, and give such treatment as will favour the shoots ripening.

Cold Orchard House.—Apple trees in pots that are intended to furnish choice fruits for dessert should be placed out-of-doors to mature their crops, as the fruits develop a much better colour in the open in a sheltered position than under glass. The receptacles should be partially plunged to prevent them from being blown over, and means should be taken to protect the fruits from birds. The roots will require rich stimulants and plenty of water at this stage.

Note-taking.—In large establishments where Peaches, Nectarines, Plums and Pears are grown in large quantities, it is advisable to make notes concerning the condition of the trees. Those that have been growing too vigorously should be noted with a view to root-pruning them at a later date. Others that are weakly should receive suitable attention in the early autumn, when a good portion of the top soil should be removed, and fresh soil substituted to encourage a more vigorous growth.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Humea elegans.—Seed of this useful plant has germinated indifferently here this season and other growers I have met have had the same experience. Where failure has occurred it will be wise to sow again, as it is not too late. I have sometimes known old seed to germinate when the new has failed.

Lilium longiflorum formosum.—Amongst the longiflorum section of Lilium the variety from Formosa is now the most suitable for early forcing. That it has taken the place of L. Harrisii, is due, I believe, to the fact that the true L. Harrisii is practically unobtainable. Certain it is that the bulbs sometimes sent out under the latter name are inferior to those which growers were familiar with as imported from Bermuda some twenty years ago. The bulbs should be potted as soon as possible after they are received from the importers. I prefer to pot them singly in 5-inch or 6-inch pots according to their size. A larger proportion of loam may be used for this variety than for the lancifolium type, say two-thirds loam and one-third peat, with plenty of sand and some broken charcoal added. Place the bulbs well down in the pots, barely covering them with soil, thus allowing room for top-dressings of richer soil later. After potting the plants place the pots in an ash-base in a cold frame, water the soil and cover the pots with granulated peat-moss litter to the depth of two or three inches.

Carnations.—Care should be taken that Carnation plants growing in pots outside shall not become too wet at the roots as a result of heavy rains. This may be prevented by constructing a light support over the plants on which may be placed frame lights in wet weather. Should wet and dull weather continue, however, it will be well to make preparations for the early housing of the plants. The houses to be occupied by them should be thoroughly cleansed and the glass washed both inside and outside. The plants should be staked and tied securely and their pots be well scrubbed before being placed in their winter quarters. After housing the plants the ventilators should be left fully open night and day for a week or two, except when fumigating the houses to rid the plants of aphides.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Turnips.—Encourage the development of the last sown Turnips; use the Dutch hoe on frequent occasions, and if the Turnip fly is troublesome dust the plants with soot or a mixture of lime and wood ash.

Winter Greens.—Kales and Savoys may still be planted. If the weather is unfavourable puddle the roots before planting them, and afterwards keep the ground stirred with the hoe.

Leeks.—The main planting of Leeks should receive an occasional soaking of liquid manure, as they are gross feeders. Encourage growth to develop by hoeing between the rows. Those of the earlier plantings should have plenty of soil drawn up to them to blanch the stems.

Out-door Tomatos.—Severe thinning of the foliage of out-door Tomatos will be necessary now. When three to four trusses of fruit have formed cut the tops out of the plants. This will favour the swelling of the fruits. Applications of liquid manure to the roots will also be beneficial to the crop.

Cauliflower.—A sowing of Cauliflower should now be made. As soon as the seedlings are large enough to handle prick them off into frames, and, if grown in cool conditions, good plants will be ready in spring for early planting. Admit plenty of air to the frames to keep the plants hardy.

Potatos.—Second-early varieties are a heavy crop and the tubers clean. The variety Katie Glover is giving us the heaviest yield. As soon as the halum begins to turn yellow nothing is gained by leaving the tubers in the ground. They should be lifted, those of eating size placed by themselves, and those of seed size selected for planting next year.

Late Peas.—The recent rains have greatly benefited late Peas, which should be staked before the haulm is bent down through its own weight. Where hawfinches and tom tits are troublesome, the best plan is to sow the seeds in rows closer apart than usual and not to stake them.

Parsley.—Where Parsley was sown in frames as advised for furnishing a supply in the coming winter, the young plants should be thinned to three inches apart. Keep the rows free from weeds and never allow the soil to become dry during the next few weeks, but at the expiration of that period less water will be needed at the roots.

General Remarks.—Much work in tidying the garden will now be necessary. Clear away all spent crops as time permits burning Pea straw, Bean stalks, and Potato haulm. The ashes should be passed through a sieve and scattered on ground that has been newly dug. Keep the hoe in operation on all favourable occasions to destroy seedling weeds. Hedges that have not been trimmed should be attended to forthwith and the trimmings burned as the work of pruning proceeds.

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

GODETIAS.

The many beautiful varieties of Godetia are becoming increasingly popular for cultivation in pots; they include two sections, one with double flowers and growing from eighteen inches to two feet in height—or three feet when growing indoors—and a dwarfer group. The taller section is very popular, as the long, graceful sprays are ideal for furnishing a supply of cut flowers. The colours vary from rose to salmon-rose, crimson, mauve and lavender, this last being very beautiful and valuable for grouping with the pale pink varieties. A pot specimen of the variety Lavender, which received the Award of Merit of the Royal Horticultural Society, on June 8, 1915, is illustrated in Fig. 49. The Mallow-like blossoms are a beautiful lavender colour with a slight shade of purple, the petals having a silvery reverse.

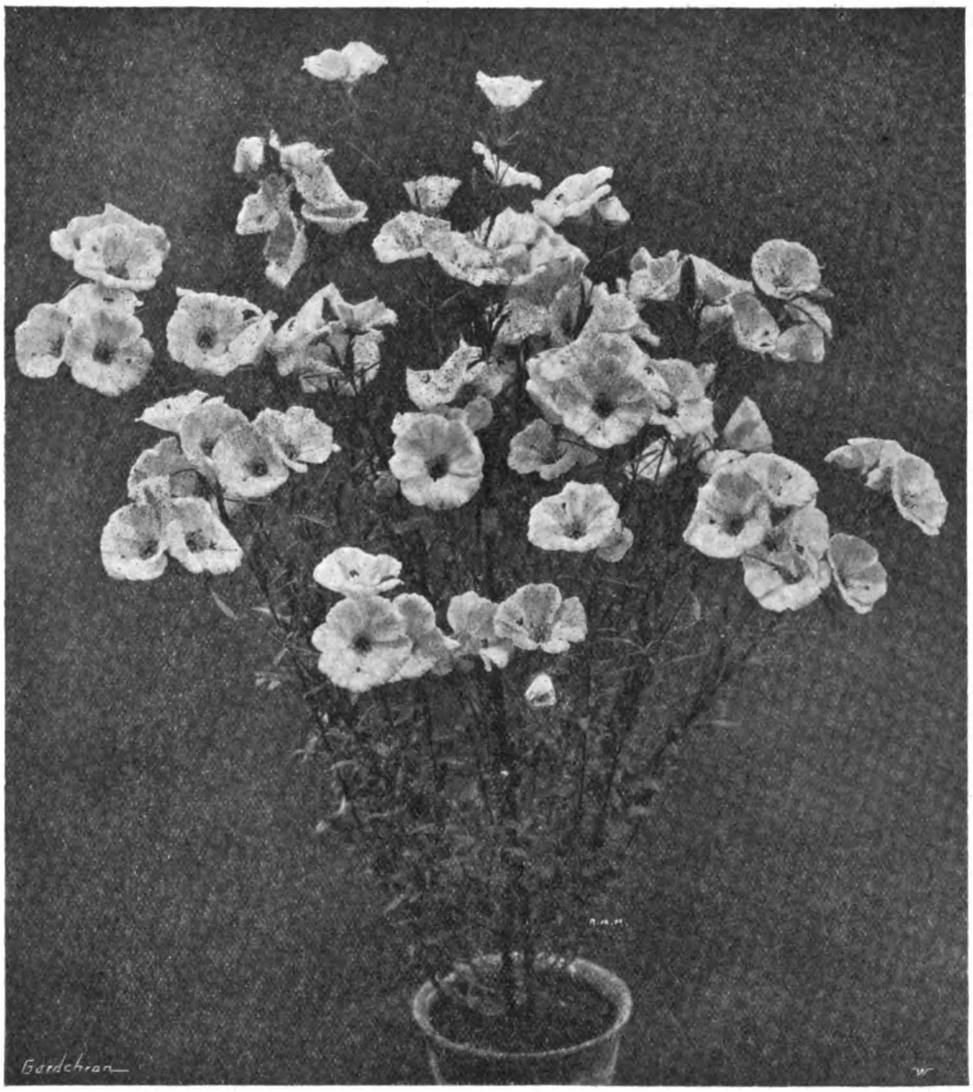


FIG. 49.—A POT PLANT OF GODETIA LAVENDER.

The dwarfer varieties, which vary from nine inches to one foot in height, are equally useful for pot culture and are suitable for furnishing the stages of the conservatory or greenhouse.

Seeds of Godetias may be sown from the middle to the end of September in a cold frame or in a cool, airy pit; thin sowing is very important, for if the young seedlings are at all crowded they are very apt to damp off. If damping off occurs the seedlings should at once be transferred to fresh compost.

The plants may be grown singly or three or four in a pot, and may be wintered in large sixty-sized or forty-eight-sized pots in cold frames, but the ideal conditions are found in a cool, airy house, where there is plenty of light, and the flowers may be kept well up to the roof-glass. Early in the new year the plants should be transferred to their flowering pots, which should be of six-inch or seven-inch size. The shoots should be tied carefully to neat stakes to ensure a well-balanced plant.

During February seeds may be sown for successional batches and the same cool treatment followed as advised for the autumn sown plants.

The potting compost should consist of a good medium loam with enough sand to keep it porous. If the loam is on the heavy side it may be necessary to lighten it with leaf-soil, but a compost consisting mostly of loam is best, as growth is then harder and sturdier, which is a very important factor in the successful cultivation of this class of plant. *J. Coutts.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but* **kept as a guarantee of** *good faith.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.

V.—THE TSANGPO VALLEY.

I HAVE stated (see p. 97) that we saw below us, as it were the Garden of Eden; and after a month in the wilderness, when we saw no green thing, emerging suddenly from a most bestial snow storm, it certainly looked like it. What we saw was a narrow valley at the bottom of which a stream ran eastwards; and the stream was bordered with trees, flanked with green grass. Whole houses and even villages were embowered in trees. There were thickets of Willow, whose varnished, tawny shoots shone orange in the sunlight; huge Poplars, with gummy buds bursting; and a tanglewood of Hippophaë, which alone remained unresponsive to the touch of spring. We went down joyfully. Along the path by the stream, green grass was springing, with a multitude of weeds, clumps of Iris, and other flowers. Birds were singing in the copse. Yes, spring had come at last.

We went to our quarters in the little monastery. In the centre of the courtyard was a standard Juniper, about 12 feet high. In one corner a Peach tree was in full bloom, and next to it grew a small Elm, just coming into leaf, and an Apple tree. Could anything be more spring like?—and how correct for Easter!

Half-an-hour later it was snowing hard, and by dusk the whole valley was white. However, that soon melted in the morning, and we started down this promising valley in glorious weather. What fun it was to walk over the green sward, and to push one's way through the thickets of Hippophaë! True, there were no flowers, except the little, star-blue Gentian and clumps of Sedge. Had it been Yunnan, there would have been flowers everywhere, with the promise of more to follow; but we were still in the Tibetan desert, and there was no prospect of water for some time yet.

Still, there were the trees, so precious as always to be walled in; and though no very consistent plan for extracting firewood seemed to be followed, yet one saw nurseries with new wood stuck in the ground, and sprouting like Aaron's rod to replace trees hacked down. Many of the Hippophaë trees were pollarded, and some were festooned with Clematis. Here and there a Peach tree in full bloom added fresh colour to the scene. But the Poplars were the pride of the valley. One I measured was 30 feet in girth four feet from the ground. It was a warrior amongst trees—not tall, for its top had been smashed and splintered again and again by storms, but massive and enduring. The bud scales of this species are stuck together with a brilliant orange varnish, which smells strongly of marmalade!

On the gravel cones were bushes of Sophora viciifolia, Barberry and Rose, none of them yet showing much sign of life; and on the very barren looking cliffs I noticed a Ceratostigma, a Didissandra, and a Campanula—probably a form of C. colorata, but not yet advanced enough for identification; also clumps of the Ephedra already mentioned. In the afternoon we reached a fine monastery at the foot of a lofty cliff, which in turn was crowned with a baronial castle; altogether it was a most imposing looking place. Down the valley we could see the snow on the mountains across the Tsangpo.

Next day, April 21, being Bank Holiday, we started early in beautiful weather. The further we went down this valley, the smaller grew the stream; till just below the monastery it entirely disappeared beneath the vast quantities of gravel strewn over the wide floor. Consequently agriculture entirely ceased for a time, and there was not much vegetation. A few miles lower down, however, we reached another monastery, supplied with water from a well; and here stood a clump of Elms in fruit, though only one or two were bursting into leaf. This Elm, when well grown, is a fine tree of 50-60 feet, but is generally pollarded and not above 20 feet high. We saw a number of them in the villages. There was another tree here, a bushy standard growing 12 feet to 15 feet high, and looking not unlike a May tree in full bloom. It proved to be a Buddleia crammed with small cream-coloured flowers with orange tube and eye, and very fragrant. It grew as a stunted bush or undershrub on the driest cliffs and walls, or even on the gravel cones; but given a chance it formed, as I have said, a small, gnarled tree with a bushy top. Later we rode through a whole grove of it, and it was delightful.

The trees down here were greener than up above—Willows were in full flower, and formed lines of greenish yellow down the fields, despite the lack of visible water; so that it was evidently not far below the surface. As we approached the Tsangpo, trees became more numerous, but I saw only the five species already noted—Elm, Willow, Poplar, Hippophaë, and Buddleia. The last named was a delightful sight in mass formation, and anyone who desires a flowering tree which will flourish in semi-desert surroundings, might do worse than try this species—if they can get it. For make no mistake, though there were trees in the valley where water flowed permanently, and green grass and cultivation, we were still in a semi-desert country. There was no sign of forest anywhere. The mountains were barren of all but the most stunted shrubs. Trees, grass cultivation—all these were accidental cases in a vast crumpled world of arid rock. However, by the roadside we saw flowers at last—a flower, for the clumps of dwarf Iris were blooming down here. It is a poor little thing with pale violet standards and greeny-yellow falls veined with violet. But it was a joy. The plant grows only a few inches high, but the clumps are a foot through.

At dusk we turned out of our valley into the immense valley of the Tsangpo, and saw the white monastery of Tsetang just ahead of us, and here we halted for the night, another lap of our journey successfully accomplished.

The 22nd was spent in cleaning up, repairing damage, after the eleven days travel from Gyantse, and making preparations for the next stage. In the afternoon I walked down to the river. The Tsangpo valley is here about two miles wide, most of which is actually river bed, except opposite Tsetang, where a tributary has pushed out a big platform of silt, now cultivated. The river was very low, and not at all imposing just here, running in sundered streams through its half-mile sandy bed. In the sand were dense thickets of Willow, comprising two species, and elsewhere a second species of Poplar, like an Aspen, was breaking into silver leaf. These close groves of fastigiate Poplar, grey against the honey-coloured mountains, were very striking. Many had been cut for poles. The gravelly wastes, where cultivation was impossible, were covered with a low, thorny scrub of Tamarix not yet in leaf. This thin, thorn scrub, represented by Sophora, Berberis, Tamarix, Rosa, etc., is typical of much of the arid country through which we had been travelling.

I saw no flowers by the river except the dwarf Iris mentioned, whose massive clumps were scattered all over the boggy ground behind the willow screen. The club-shaped fruits of an Equisetum showed above ground by a ditch.

After the river I tried the mountain above Tsetang, exploring a gulley which, being green with Poplar and Elm trees, promised well. But as with every other situation in this country and at this season desire outran performance; much, or at any rate something, was promised, nothing performed. There was, for example, a large bush of some Jasmine or other, but it displayed neither leaf nor flower.

On the rocks were clumps of a not uninteresting looking Potentilla, tall Thistles, Didissandra, and other oddments, most of them perfectly dead. Even more exciting were thickets of an Acanthaceous undershrub, but whether a Strobilanthes (as I suspected) or some other, the evidence was insufficient to determine. Its presence, even in a sheltered ravine where clots of snow still survived, astonished me. The ravine yielded nothing else, nothing, that is, whose remains could be identified by me; for in recording plants, I am even now forced to deal more with last year's relics than with this year's fledgings.

One interesting thing I discovered. On the road I picked up a sprig of a dwarf Rhododendron, probably allied to R. anthopogon. On enquiry, I was told that the plant grew on the mountains within a few miles of Tsetang, and was brought in to be sold to the monasteries; the lamas, it would seem, burn it instead of the more usual Juniper, for the sake of its aromatic smoke, which stimulates the nostrils of the gods! I also learnt that we should meet with the plant on the road, very soon, though it is not yet in flower.

And that is about all there is to write of the flora of Tsetang and neighbourhood at this season. We observe a drab-looking mountainous country, whose valleys are full of gravel, where trees are exceptional, and then grow on sufferance; where flowers are uncommon; where drought—eight months drought in the year—and wind are the rule; where piercing heat by day alternates with shrill cold by night; where rain seldom falls, but when it does (and especially during the four short summer months) falls hard and fast; (it is raining to-night, by the way); where the snow-fed rivers are torrents during the summer, and almost cease to function during the rest of the year. The normal vegetation of the country is a thin covering of grass and thorn scrub with scattered succulent and rosette plants on the cliffs, and cushion plants on the wind-swept plateaux.

My herbarium numbers but five species after a month's travel in Tibet. From now onwards it will be a different story; and in my next chapter I shall tell of live, vivid flowers, instead of diagnosing remains as heretofore. But as we now step off into the unknown, it will be some time before that next chapter can be written; it may well be months before we are again in communication with the world beyond the mountain walls of Tibet. *F. Kingdon Ward.*

The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21 and August 9, 1924.

THE ROSE GARDEN.

ROSE ZÉPHIRINE DROUHIN.

"It is absolutely the only absolute thornless Rose; it has absolutely the sweetest scent of any Rose; it is absolutely the most glorious coloured of all Roses; it blooms more than any Rose; it requires no pruning and costs less than any Rose. . . . To me it is astounding it is so unknown." So wrote in 1919 in his characteristic, emphatic breezy style, the late Lord Fisher respecting Zéphirine Drouhin. A naval friend hearing Lord Fisher had taken to planting Roses, exclaimed:—"They'll d——d well have to grow!"

Leaving out the "absolutes" the admiral has, in the above quotation, summed up succinctly the merits of this Rose. It is not absolutely thornless. The back of the midrib of the leaf often bears small prickles and a few, sparsely scattered thorns are occasionally to be found on the base of the stem. It may, however, for practical purposes, be taken as thornless, since what prickles there are, rarely interfere with the handling of the plant. Such a Rose as Zéphirine Drouhin suggests the possibility of raising a race of thornless Roses of various hues and habits; though one must admit that the armature of some varieties has distinct beauty in itself. This is seen in perfection in some of the Pernetianas, *e.g.*, Mrs. Wemyss Quin. Here the thorns are large and bold, ruddy and translucent, and sufficiently widely spaced to permit the avoidance of them when grasping the stem with finger and thumb. The annoying Roses are those in which the shoot is so thickly beset with prickles that the stem cannot be held without coming into contact with them. The rugosa hybrids—Conrad F. Meyer may be mentioned—are offenders in this respect.

Zéphirine Drouhin, no doubt, has a very sweet scent, but there are Roses more lavish with their perfume. Its colouring may aptly be described as glorious, being of a glowing, soft deep pink, fading however, with age, to a less pleasing rose pink. It is a very free, continuous bloomer, but one cannot say it surpasses such Roses as Fellenberg or the old China Monthly in this respect. It is also true that it is a Rose that needs little attention in the way of pruning, provided one has unlimited room for it. Its price is not necessarily lower than for any other Rose; but it is capable of doing quite well on its own roots and so may be propagated by cuttings—a cheaper method than by budding.

This variety is of continental origin and was introduced by Bizot in 1873. It is a Hybrid Bourbon and may be considered the best of its class. Perhaps owing to its habit it is not so well known as it should be. It is a "betwixt and between" Rose. It is neither a full climber nor a bedder in the ordinary sense. It wants plenty of room to show to advantage, but space rather in the horizontal than vertical direction. Probably it is best treated as a low, wide-spreading bush. Its tendency is to extend outwards and this may be helped by a little pegging-down. Its clusters of bloom are held erect, hence one wants to look down on it rather than up to it.

The individual flower is on the small size, finely formed, but with the point of the cone not rising above the outer petals. This gives the half opened bloom the shape of a wide-mouthed vase. The flowers are bunched closely together, forming flat clusters. These may contain so many as a dozen blooms each, but usually fewer. The individual flower has such a short stalk as to prevent its being used singly as a cut flower and so the whole spray has to be taken with some sacrifice of buds; but as it is so free one can afford to do this.

Zéphirine Drouhin is by no means proof against mildew; in fact it is rather susceptible and to be relegated from gardens very liable to this bane of the Rose grower.

It is well at times to dwell upon the merits of some of the older Roses; as there is the fear, owing to the *embarras de richesse* turned out by our Rose-producers, of even some of the best of them going out of cultivation. Zéphirine Drouhin appears to be one that should not be allowed to disappear. Miss Jekyll has sung its praises in a recent volume of the *Rose Annual* (1922, p. 37). It is also unique, I think, in being the only variety beginning with the letter Z. Let us drop the second name as recommended by Miss Jekyll and call it simply Zéphirine.

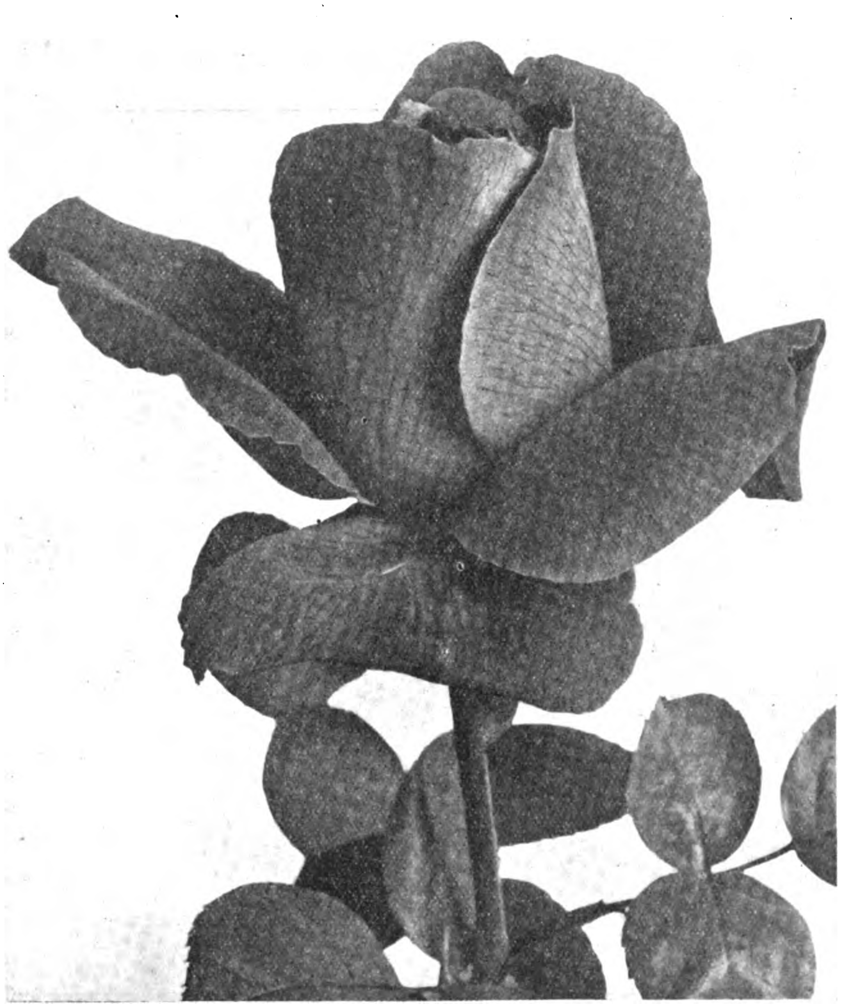


FIG. 50.—ROSE JOHN RUSSELL.

Gold Medal Bagatelle · Rose Trial also N.R.S. Certificate of Merit, August 6. (see p. 120 and p. 393, Vol. lxxv.)

ROSE MARGARET DICKSON AND ITS WHITE RIVALS.

I am glad to see that your contributor, Rev. David R. Williamson, has a word of praise (p. 115) for what we may now consider an old Rose, the H.P. Margaret Dickson. He goes so far as to designate it as "still one of the loveliest Roses in cultivation"; but my experience does not altogether agree with his when he refers to it as withstanding rain so well in contrast to its successful rival, Frau Karl Druschki. The latter is a sad disappointment in bad weather but both are liable to suffer injury. To date (August 21) I have hardly been able to cut a single bloom of Frau Karl Druschki undamaged by wet. Hence the plea for rainproof Roses for the "humid west," as Sir Herbert Maxwell styles this side of Great Britain. We are "enjoying" our third successively cold, wet summer!

It is rather strange that white Roses as a whole are more susceptible to damage by rain than coloured varieties. What is the cause of this? Is it due to some difference in the texture of the petal, or has the absence of pigment any bearing on it? The bloom of Margaret Dickson is, in my experience, marred considerably by rain, though not to the same extent as that of Frau Karl Druschki. The former has not the snowy whiteness nor the exquisite shape of the latter; but it has a refreshing odour though not of a Damask nature. Margaret Dickson was sent out by Messrs. Alex Dickson and Sons in 1891 and supplanted largely the former best white H.P. Merveille de Lyon Frau Karl Druschki came from the Continent at the very beginning of the century and often now goes by the very appropriate name of Snow Queen.

Margaret Dickson is still worth growing in the north-west in gardens where mildew is not troublesome. It has a wondrous vigorous habit of growth, and its blooms, held erect, gleam forth in the Rose garden above their fellows.

Is Frau Karl Druschki to lose the high position it has occupied so proudly for a quarter of a century? It looks as if the new Gold Medal H.T. Rose, Marcia Stanhope, may throw out a serious challenge, for it has the additional charm of fragrance. I am as yet unfamiliar with it. Has it the snowy whiteness and stiffness of stem of Frau Karl Druschki? If so then it is bound to take the first place among the white sorts as a bedding Rose. *J. P. Carlisle.*

NOTES ON SOME ANTIRRHINUM DISEASES.

1.—Stem-Rot and Leaf-Spot Due to Phyllosticta Antirrhini, Syd.

In July, 1923, the attention of the authors was called to a disease of Antirrhinums which was causing some considerable loss among both "bedding" and "intermediate" varieties grown from seed in Buckinghamshire. During the same week a similar complaint was received from Birmingham, in this case the plants chiefly affected being those raised from cuttings.

In both cases examination of the plants showed the base of the main stem to be attacked by a pycnidial fungus of the type usually referred to Phoma.

The stems were dark-coloured and had a water-logged appearance. Later they became studded with pycnidia. Under moist conditions, such as obtain when the plant is young, the diseased cortex is soft and easily comes away, but affected stems later become pale and dry, and may split to some extent. Unless the attack is arrested the whole plant wilts and finally dies, although the roots remain healthy. (Fig. 51.)

Plants showing the same disease have since been received from Berkshire, Surrey and Hertfordshire, so that it appears to be fairly widely distributed, although the only record of such a disease in this country traced by the authors is that under the name of Phoma oleracea, in the monthly *Summary of Reports on Plant Diseases* circulated by the Ministry of Agriculture (July, 1923).

Reference to literature indicated that the fungus would probably prove to be the same as that causing a Stem-Rot of Antirrhinums, described by F. C. Stewart in 1900 in *New York* (*Geneva*) *Agr. Exp. Sta. Bull.* 179, and called Phoma poolensis by Taubenhaus (*Diseases of Greenhouse Crops*, 1919).

More thorough examination of affected plants from the beds revealed a few spots with similar pycnidia occurring on the leaves, and this fact connected the disease with a Phyllosticta disease of Snapdragon which was described in some detail by Guba and Anderson and by Smiley (*Phytopathology*, Vols. IX. and X., 1919 and 1920). These authors identified their fungus as Phyllosticta Antirrhini, Syd., and considered it to be the same organism as that described by Stewart. According to them the leaf-spot phase appears to be the most common in America. In a letter to one of the authors, however, Taubenhaus has stated that from his own observations the fungus is especially destructive on stems, although it is occasionally found on the leaves.

This is the experience of the writers in this country, and the matter will again be referred to later. Taubenhaus also stated that undoubtedly all the American writers were dealing with the same fungus, which is further identical with the species first described by Sydow in Germany in 1899 (*Hedwigia*, XXXVIII., p. 134).

The fungus was isolated in pure culture from pycnidiospores obtained from lesions on the bases of stems, as well as from pycnidia found on leaf spots. All isolations of the fungus were found to give similar growth in pure culture and to be capable of infecting stems of Antirrhinum plants through wounds and of forming ultimately typical pycnidia of the organism on the lesions.

Further, inoculations by spraying unwounded plants with a suspension of the spores in water were carried out several times. In this case results were less certain, but always a number of leaf-spots were obtained. No infection of the stem, however, took place except through wounds.

The leaf-spots obtained by spray inoculations were similar to those described for Phyllosticta Antirrhini, namely large, more or less rounded areas with no definite margin, frequently towards the edge or tip of the leaf, pale in colour and later becoming dried out and very brittle. Pycnidia were formed on the dried areas.

In order to compare the organism as it occurs here more directly with that described in America, a pure culture of the fungus was obtained from the Culture Station at Baarn, Holland, which had been originally isolated by Smiley. When comparative cultures were made the authors were struck by considerable differences in appearance of the growth on various media tried of the American fungus as compared with that isolated here. The culture of Smiley showed invariably a tendency to produce pycnidia much more freely.

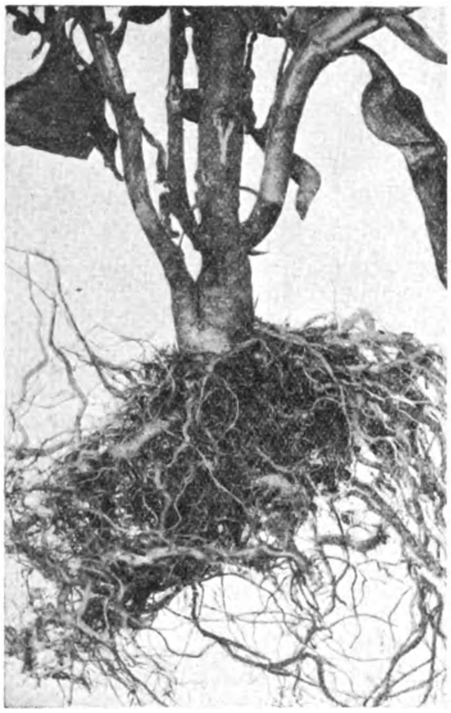


FIG. 51.—PHYLLOSTICTA ANTIRRHINI CAUSING ROT AT THE BASE OF THE STEM OF ANTIRRHINUM.

Numerous pycnidia are present on the discoloured area.

After considerable comparative culture work, including a study of the enzymes produced by the fungi, it was found that our fungus was capable of readily hydrolysing boiled starch in agar media, whereas the American fungus, which had been maintained in pure culture for some two or three years, showed no appreciable action. This difference in the digestive powers of the two cultures was sufficient to explain the marked differences which had been observed in the macroscopic appearance of the growths on artificial media. However, it is considered that the difference is no more than might be expected from two strains of the same organism and that the fungus causing the disease in this country belongs to the same species as that found in America.

It was not possible to examine herbarium material of the diseased plants from America, but through the courtesy of Dr. C. Lindman, of Stockholm, the authors were enabled to examine the type specimen of Phyllosticta Antirrhini, Syd. This appeared to be identical with the disease as found on the leaves here.

Our inoculation experiments have confirmed the observation of American workers that, although succulent shoots of Antirrhinum plants readily succumb, it is difficult to produce infection after the stems have become old and woody.

Later in the season observations were made which are of importance in connection with the starting of centres of infection and the dissemination of the disease. Secondary infections were observed on the flowering stems of the plants and quite frequently on the seed capsules, which were noted covered with the pycnidia not only in the field but also amongst those which had been harvested for the seed crop. In extreme cases no seeds were formed in the capsules. In other cases the seeds present were covered with hyphae, and the capsules did not open to set them free. When such seeds were freed by threshing and sown they appeared to be for the most part dead. In some cases, however, viable seeds were obtained from capsules bearing pycnidia. Not all capsules on the same flowering stem were affected - sometimes only one—and it appeared that the infection had in all cases spread from the capsule to the stem and not *vice versa*. The dying corolla of the fertilised flower in moist weather would provide ideal conditions for the initiation of infection. Pycnidia of the fungus were found on the capsules of several varieties and one case is illustrated in Fig. 52.

Owing to the fact that capsules in which the seed is infected frequently do not open, it is likely that self-shelled seed, even from an infected plot, would be free from the organism. However, with the amount of cleaning which is commercially practicable, it is usual to find a small percentage of pieces of the seed capsules in threshed seed as offered for sale. Obviously it is possible, in the case of an infected plot, that a proportion of these pieces of capsules should bear pycnidia of the fungus and thus serve as centres of infection for the fungus in seed trays.

Guba and Anderson describe a "damping off" caused by the fungus, but from their illustrations the effects observed would appear to be more in the nature of a "foot rot" than of damping off as ordinarily understood. The experiments of the authors indicate that, although infection can doubtless take place in the seedling state (Fig. 53), the action of the parasite is not ordinarily rapid enough to give rise to wholesale death of seedlings in the seed trays.

The authors have confirmed the observation of Guba and Anderson that the fungus can pass the winter as pycnidia in old lesions on dead stems and leaves. Affected shoots were left outdoors during the rather severe winter of 1923-24, and in April it was found that on mounting in water the pycnidia on these shoots gave very numerous viable conidia, from which pure cultures were obtained. The latter proved to be capable of infecting succulent shoots when inoculated into wounds. It was also found that pycnidia on seed capsules kept dry indoors over the winter—under conditions comparable to those of stocks of seed—gave rise to many viable and pathogenic conidia in the spring.

As mentioned above, it is also possible that the fungus may be added to the soil with the seed, and when conidia of the fungus are inoculated into wet sterilised soil, they germinate to produce a mycelium which in turn gives rise to a few pycnidia. The probability is that the greater proportion of primary infections take place from the soil, either when the plants are young seedlings or through wounds soon after they have been planted out in the beds. Although it has not been proved that previous troubles have been definitely directly due to Phyllosticta Antirrhini, one large grower of Antirrhinums for seed finds that he is amply rewarded for the extra trouble and expense involved in giving his plants a clean start by raising them in soil previously treated with a two per cent. solution of formaldehyde.

In culture the fungus is found to prefer rather a high temperature—about 77° F.—for optimum growth, and, as stated by Smiley, below a temperature of 68° F. only a very small proportion of spores are able to germinate. Herein would seem to lie the explanation of the fact that the leaf-spot phase is of very minor importance in this country, whereas it appears to be a more frequent characteristic of the disease in various parts of the United States. Conditions here in the field will rarely be such that both the temperature is high enough and the atmosphere moist enough for effective germination of the spores and penetration of the host plant.

The disease is one of greenhouse conditions and with us doubtless usually starts from the soil in which the young plants are raised. Any slight wounds caused in transplanting would give it a start on the stem, and naturally cuttings would be particularly liable to be attacked. Thus in our conditions it is unlikely that spraying the plants, as recommended by the American writers, would be profitable. In order to maintain comparative freedom from the disease it is advisable to raise all plants in clean or sterilised soil. Any affected plants should be removed and burned as soon as noticed, and before re-planting with reserve plants the soil should be watered with some such solution as the Cheshunt Compound, to which reference has frequently been made in these columns. Excessive moisture in the soil or the atmosphere is to be avoided.

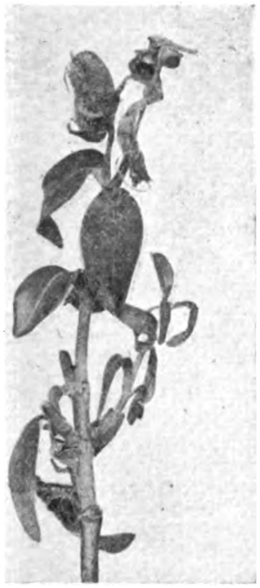


FIG. 52.—PYCNIDIA OF PHYLLOSTICTA ANTIRRHINI ON SEED CAPSULES OF ANTIRRHINUM.

Occurring very commonly on Antirrhinum plants late in the season and frequently associated with the Phyllosticta is a species of Diplodina which should be carefully distinguished. When mature the pycnidiospores of this fungus, Diplodina Passerinii, Allesch, are two-celled and considerably larger than those of Phyllosticta Antirrhini (see Fig. 54), but in the immature condition it is not always easy to distinguish the two fungi even with the help of the microscope. When it gains access to old plants through wounds the Diplodina, which has an optimum temperature considerably lower than that of the Phyllosticta, goes ahead rapidly and at the end of the season plants may be found which are almost covered with pycnidia of the fungus. It occurs on the seed capsules and has been found on capsules alternating with those bearing pycnidia of the Phyllosticta. It is not considered, however, that the Diplodina is capable of acting as a troublesome parasite to young and healthy plants.

II.—LEAF DISEASE DUE TO CERCOSPORELLA ANTIRRHINI, WAKEF.

The fungus causing this disease was described by one of us from specimens sent in in 1918 (*Kew Bull*, 1918, p. 233). Later a more detailed account of the disease was given in *Gard. Chron.* Vol. LXVIII, 1920, p. 158, by Miss Cayley.

It is curious that in spite of careful search in the literature no previous reference to such a fungus on Antirrhinums has been found, for in this country, at least, this seems to be now the most common and also the most destructive disease attacking these plants. In 1922 specimens were found or received by the authors from four localities, in two of which the attacks were causing serious damage. In 1923 the disease was noted in three districts, and in the present year, in addition to that from artificial inoculations, material has been obtained from three localities, in one of which again the damage is reported as considerable.

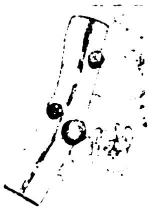


FIG. 53.—PHYLLOSTICTA ANTIRRHINI.
Lower portion of hypocotyl of seedling Antirrhinum (raised in sand inoculated with the fungus) showing pycnidia, from one of which a spore-tendril is issuing.

Miss Cayley (*loc. cit.*) gave to the disease the name of "Shot-hole," stating that it resembled in its effects the Shot-hole Disease of Peach and Nectarine due to Cercospora circumscissa. It is true that a shot-hole effect is sometimes observed, but observations during the past two or three seasons have indicated that this is perhaps the least common phase. As a rule the blotches are larger and more irregular in shape than those figured by Miss Cayley (*loc. cit.* Fig. 69), and eventually the whole leaf is involved.

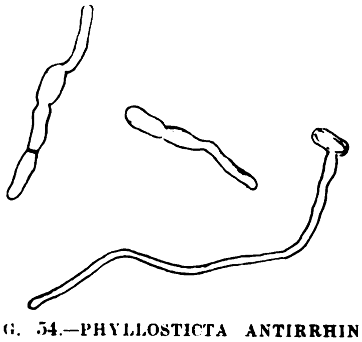


FIG. 54.—PHYLLOSTICTA ANTIRRHINI.
Germination of conidia. × 850.

In cool, moist weather, spraying the plants with a spore-suspension in water readily produces numerous infected spots, especially on the young leaves. The first symptoms, which appear in about ten days after spraying, are pale yellowish patches on the leaves, at first with no very definite margin. Isolated spots on older leaves may become sunken, circular areas, which later give the shot-hole effect. On younger leaves just unfolding and on the young stems, curling and deformation similar to that caused by aphides is produced. Later the leaves dry and turn brown, so that the final effect of a bad infection is as if the shoot had been scorched. Completely dead shoots like those figured by Miss Cayley (*loc. cit.*, Fig. 68) are quite common. Conidia are produced on both surfaces of diseased areas on the leaves, and also on stem lesions.

All the varieties of Antirrhinum ("bedding" and "intermediate") tested by us have been found to be susceptible, but some more so than others. There is some indication that varieties having red pigment in the leaves and stems, such as Bright Crimson, may be relatively resistant. Green-leaved bedding varieties have been found to be very susceptible.

In none of the varieties inoculated by us has the spot produced shown the definite purple-brown margin described by Miss Cayley as occurring on her green-leaved varieties. On the contrary this type of spot (a very definite "eye-spot") has been produced by inoculation with another fungus, Septoria Antirrhini (see below).

When grown in pure culture Cercosporella Antirrhini fails to make any growth at all either from conidia or from partly-formed colonies when it is incubated at a temperature of 77° F., and its optimum temperature for growth appears to be in the neighbourhood of 65° F. When suspended in warm liquids, as is done in the process of making dilution plates, the conidia of the fungus (see Fig. 55) are killed outright at temperatures appreciably lower than those sustained by some other common parasites. It is clear, therefore, that the disease is most likely to give serious trouble in cool summers, and for that reason, probably, is more common in this climate than the previous disease (Phyllosticta), which requires high temperatures for germination and growth from the spores.

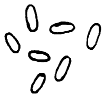


FIG. 55.—CONIDIA OF PHYLLOSTICTA ANTIRRHINI. × 850.

The effect of temperature has been particularly well shown during the present season. The first artificial inoculations, made by spraying early in June, when the weather was still abnormally cool, produced bad spotting and deformation of the shoots in every case on the more susceptible varieties of Antirrhinum. Later in the month the weather became warmer and a spell of dry, hot weather set in. During this period there was not only no further spread of the disease, but the new growth made by plants already affected came away quite clean and healthy. Examination of the dead leaves showed that very few spores were produced during the dry weather. In such cases, however, there is no doubt that the fungus merely remains dormant in the tissues, ready to produce conidia in abundance as soon as the conditions become again favourable for its growth.

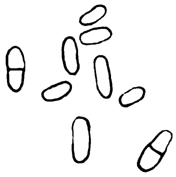


FIG. 56.—CONIDIA OF DIPLODINA PASSERINII. × 850.

The full life-history of this fungus is not yet known, consequently control by spraying and destruction of diseased plants as suggested by Miss Cayley are all that can be recommended.

From pure cultures the authors have obtained some evidence that another stage may be included in the life-cycle in addition to the abundant production of conidia on the leaves. They would therefore be grateful if any occurrences of the disease were brought to their notice, and specimens forwarded to them either to the Herbarium, Royal Botanic Gardens, Kew, or to 7, Redlands Road, Reading.

III.—LEAF SPOT DUE TO SEPTORIA ANTIRRHINI, ROB. EX DESM.

This disease, which was first recorded for this country by Chittenden (*Journ. Roy. Hort. Soc.*, XXXV, 1909, p. 216), causes small rounded spots on the leaves, characterised by a pale central area surrounded by a definite purplish-brown margin. In the spring of this year the fungus was recorded in the Ministry of Agriculture's *Monthly Summary of Plant Diseases* as occurring at the Harper Adams Agricultural College. Mr. N. C. Preston, who found it, stated that the disease was very prevalent in March, but that in April the plants were all recovering. From material kindly supplied by Mr. Preston, cultures of the fungus were made, and a few preliminary inoculations from these have shown that this disease also is probably one of cool, moist weather, and not as a rule likely to be very serious. Spray inoculations made early in June produced numerous spots on the lower leaves after about a month. Later inoculations made during warmer weather have had no result so far. *W. Buddin and E. M. Wakefield.*

IMPERIAL BOTANICAL CONFERENCE.

(*Continued from p.* 133.)

THE selection of physiological differences should give valuable results provided that the work of selection is coupled with physiological study. A few examples of such differences in Cotton were noted. In conclusion, attention is called to the risk pointed out by Harland, that the mine of raw material provided for selection by the natural jumble of varieties is liable to be destroyed unless plant breeders deliberately maintain a rubbish heap through which to rake for valuable material.

Mr. W. N. Sands spoke on the selection of high yielding varieties of Rice in Malaya. In British Malaya Rice occupies only about two per cent. of the area of the country. The output feeds but one-third of the population, and the average value of Rice imports is about three-and-a-half million pounds sterling per annum. Efforts have accordingly been made to add to the Rice area and to evolve new and improved varieties. Of the 1700 putative varieties collected in different districts probably not more than 300 to 400 are distinct. Five main lines of improvement in the Rice crop are laid down, but the studies in one only of the lines—pure line isolation and selection—were described.

Meanwhile the other section were listening to first, an academic paper by Dr. E. M. Delp, on 'Spermatia in the Red Algae,' followed by Miss Welsford describing the 'Diseases of Clove Trees in Zanzibar' (see *The Gardeners' Chronicle*, Vol. LXXV., p. 213). The last paper in this section was by Professor J. H. Priestley, on 'Vegetative Propagation.' If the agricultural produce of the British Dominions is to find a secure place on the world's markets in free competition with the exports of communities whose agriculture is continually more scientifically directed, one great desideratum is that the article to be exported should maintain a definite standard of quality. Such uniform yield as this demands can never be obtained by agricultural produce when the plants yielding the produce are themselves chance seedlings from parents liable to cross pollination. It is therefore of great importance that the work of selection amongst the numerous seedling strains in plants of agricultural value should be followed where possible by experiments upon the possibility of vegetative propagation of the selected seedling. When the acreage under cultivation is thus filled with plants multiplied by vegetative means a few selected strains with yield of known quality may be relied upon to drive rapidly out of cultivation the miscellaneous chance selected seedlings previously filling the plantation. In Europe, and now in the United States, this process has operated and in the case of fruit in particular, as also with the Potato, the markets are supplied with the produce from comparatively few selected, vegetatively—propagated strains.

Whilst it is true that, given sufficient patience and adequate facilities, practically any flowering plant may be propagated vegetatively, it is quite another matter to discover a method in respect to any particular plant which is sufficiently reliable and at the same time so simple a procedure that it can readily be carried out by unskilled labour under large scale cultivation conditions. Unfortunately the rules for the guidance of the plant propagator are still largely empirical. The normal healthy plant may be regarded as in a state of equilibrium with shoot and root development commensurate with one another. The first result of an attempt to propagate vegetatively is a separation of one part of this equilibrium system, and then an attempt to get the severed part to restore this former equilibrium. A first essential is a healthy healing of the surface of separation, in itself a subject requiring detailed investigation. The result is to show the importance of the existence in the severed parts of meristem regions capable at once of further growth; anatomical study along these lines explains to a great extent the relative ease or otherwise of propagation. It can be shown, too, that in the majority of cases the origin of new shoots or new roots is to be found in different tissues, so that anatomical study may ultimately throw considerable light upon the principal governing regeneration in different plants.

After tea there was a lecture in the rooms of the Linnean Society by Mr. F. A. Stockdale, Director of Agriculture, Ceylon, on "The Peradeniya Botanic Garden," illustrated by a large number of excellent coloured slides.

(*To be continued.*)

MARKET FRUIT GARDEN.

RECENT weather has been all that could be desired for fruit plantations, except that it has brought up a fresh crop of weeds and given little opportunity to deal with it. The alternating sunshine and showers have caused the fruit to swell rapidly, so that some fine big samples will be seen. Shoot growth also has been vigorous. If we should be favoured with a dry autumn, so that the new growth may be thoroughly hardened off, conditions should be favourable for a big display of bloom next year.

BLACK CURRANTS.

It is some years since we had such a favourable season for Black Currants. Not only was the fruit plentiful and very big, but the bushes have made strong growth. There is no doubt that this crop needs a lot of moisture. The bushes quickly show the effect of drought. When digging up reverted bushes this season I realised, as never before, what a surface-rooting subject this is. The young bushes were planted deeply; but the original roots appeared to be inactive, if not actually dying off, whilst new fibrous roots in plenty had pushed out from the base of the branches just below the surface of the ground. These roots are just the ones that are likely to be damaged by careless hoeing. I can quite see the value of the heavy mulching which some of the best growers give as soon as the crop has set. One very successful grower mulches so heavily with pig manure that weeds are kept under without hoeing. I believe, though, that the manure ought not to touch the stem or branches, as the bushes would root into it and the roots would be left high and dry when the manure subsequently disappeared. I have never had enough material to carry out this sort of mulching. My best crops this year were on bushes which had been dressed with meat meal. This gave better results than a light dressing of farmyard manure dug in during the winter. There is no doubt that Black Currants require very heavy manuring, and can hardly be treated too generously.

APPLE EARLY JULYAN.

In a year of plenty this Apple is little more than a nuisance to a grower, but in a season of scarcity like the present it is distinctly useful. Everything being late, there were very few Apples on the market in the week before Bank Holiday. I therefore took the opportunity to rush in all the Early Julyan, which realised 5/- to 6/- per half-sieve of 20 lb. It was one of the few varieties bearing a full crop, and the size this year was exceptional, particularly on some trees in grass, which had received a dressing of nitrate of soda. However, I should never plant this variety again as Early Victoria is so very much better for size and quality, whilst it is ready to market even earlier. This also cropped fully and sold well.

PECULIARITIES OF THE SEASON.

Whilst most Apples look very healthy, there is a peculiar spotting of the leaves of some varieties, particularly Cox's Orange Pippin and Beauty of Bath. At first I attributed this to spray injury, until the trouble was found also on trees that had not been sprayed at all. The spots are mostly round and very numerous, and many of the leaves fall. Specimens were sent to two of the research stations, but so far the disease has not been identified. In both cases I was told that similar specimens had been received from other growers, but that the spotting appeared to be something new, probably being caused by the wet weather of the spring and early summer.

Another peculiarity of the season is the patchiness of cropping in Apples. This is seen notably in Beauty of Bath. The crop of this variety is very light indeed, but here and there is to be found a tree loaded with fruit.

DUSTING FOR APHIS.

There could hardly be a season with less aphis damage; but during July the permanent Apple aphis did make an appearance on the tips of the shoots of quite young trees. The insects were quickly cleared by dusting with a nicotine powder, using a hand distributor or "cloud gun." This is the only use for which I have found dusting valuable. Where there is only a little work to be done here and there over a wide area, dusting is lighter and easier than spraying. The method was used with equal success against aphis on the tips of young Black Currants. Nicotine powder is very effective against aphides; but I have not had good results from dusting against any other pest or disease.

WIND DAMAGE.

There are few things more troublesome to a fruit grower than wind. Some of my newer land is a problem in this respect. To look at the land one would think it would be sheltered by hills; but hills seem to be useless for this purpose. Shelter trees were planted, of course, but these take time to grow to useful size. Meanwhile the wind has its way. The heads of young trees are bent over, although the stems are held upright by stakes. Shoots of Gooseberry bushes are broken off wholesale.

In one plantation of bush Apples, in their sixth year, wind has done a good deal of harm. The trees, now quite large, all looked well in spring. During the summer some of them suddenly began to fail, the leaves turning yellow and no growth being made; a few have died outright. Nothing could be found to account for it, until at last it was remembered that those particular trees were some that were blown away from their stakes during the gales of last autumn. The soil at the time was sodden by the heavy rains, and the trees were blown round until the stems made large holes in the soil. No doubt most of the roots were broken or loosened; hence the failure of the trees this year as soon as the tops began to make a demand for moisture.

In time, no doubt, this new land will be as well screened as the older parts of the farm by shelter trees; but these really ought to be planted several years in advance of the fruit trees. *Market Grower.*

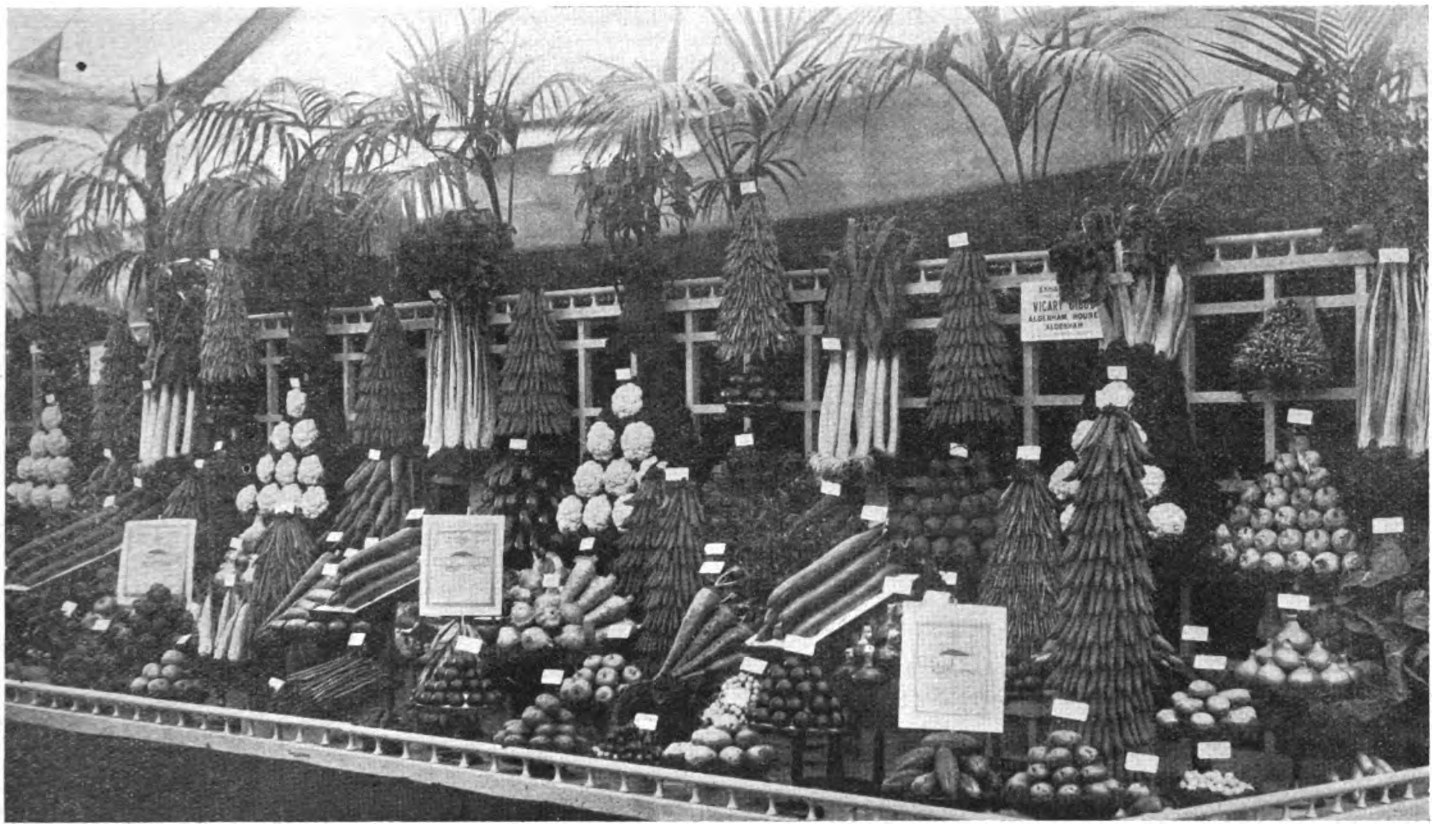


FIG. 57.—VEGETABLES EXHIBITED BY HON. VICARY GIBBS (GR. MR. EDWIN BECKETT) AT THE SHREWSBURY SHOW. Awarded a Gold Medal and a Special Jubilee Trophy. Mr. Beckett was also awarded a Gold Medal for "Superb Cultivation."

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

See Tables and Summaries, Ante, pp. 79-84).

(*Continued from p.* 135.)

ENGLAND. MIDLAND COUNTIES.

Buckinghamshire (*continued*). — The fruit prospects are by no means unsatisfactory. The Plum crop is probably the worst; although the trees flowered profusely they failed to set a crop. This may be accounted for by their weakened condition due to last year's severe aphis attacks. The soil here is a strong loam on heavy clay. Black Currants are the worst of the small fruits; the "big bud" mite has taken its usual toll. *G. F. Johnson, Waddesdon Gardens, Aylesbury.*

Cheshire. — Apples, Pears, Plums, and Cherries gave promise of bounteous crops, but Plums are very disappointing, bad weather prevailing during the blooming period. Apples are more plentiful in these gardens than for some years past, due, in my opinion, to changing over from grass to arable cultivation. As usual, Gooseberries have done better than any other of the bush fruits. Fruit culture in this part of Cheshire is very disappointing. *T. A. Summerfield, Alderley Park Gardens, Chelford.*

——All varieties of Apples are carrying good crops of clean fruit. Pears are also good; very few varieties have failed to crop. Plums and Sweet Cherries were failures, but Morello Cherries were an average quantity and the trees are clean. Gooseberries, Red and Black Currants, and Strawberries were all very satisfactory. Raspberries also were good, especially the fruit from young canes on fresh soil; older kinds suffered a little owing to dry weather. All trees and bushes were covered with blossom, but the cold, wet summer and autumn of 1923 is the cause of the failure with Plums. Our soil is a heavy red loam on a subsoil of sand. *James R. Allan, Tirley Garth Gardens, Tarporley.*

——Apples, Pears, and Cherries promise to be of excellent quality. Gooseberries were of extra large size, but the crop was below the average. Stone fruits generally are below the average yield; in many places Damsons are a failure. There was a remarkable show of bloom on most stone fruit trees and there was no frost during the blooming time. This points to something other than frost as the cause of failure. I have an idea that the pollen was not fully matured. There are better crops of Apples on heavy soils than there are on light, sandy soils. *Jas. Atkinson, Torkington Lodge Gardens, Hazel Grove, near Stockport.*

Derbyshire.—The fruit crops at the time of writing promise to be about average all round. The fruit trees and bushes in the spring were well furnished with bloom, after very light crops last year, but the flowers opened very late in the season and owing to wet and cold weather during the time they were expanding the early promise of abundant crops are not fulfilled. *John Maxfield, Darley Abbey Gardens, Derby.*

Hertfordshire.—Apples are a light crop and there will be a scarcity of late keeping sorts both of dessert and kitchen kinds. Plums are a failure, owing I believe, to a large extent to the attacks of Aphis last year, which crippled the young growths, and also to the want of sunshine during the setting period. The trees were continually wet and suffered from excessive moisture This year all trees are clean and healthy and making good growths. Peaches, which suffered badly from blister of the foliage in the early stages are now growing vigorously and seem to have greatly benefited by the sunshine of summer. Apples, Pears, and Peaches are very late this year. Our soil is loam with a clay subsoil; other parts are gravelly. *Geo. H. Hill, Caldecote Gardens, Bushey Heath, near Watford.*

——Apples, the most important of our hardy fruit crops, are very disappointing in this locality; the majority of what appeared to be fruit buds produced only leaves. The flowers opened very late, in fact, the foliage appeared at the same time, and my experience is, when such is the case, the result is always a poor crop of fruit. Our best cropped varieties are King of the Pippins, Hambledon's Deux Ans, Beaumann's Red Reinnette, Small's Admirable, Quarrenden, Grange's Pearmain, and Lane's Prince Albert. The trees are making good growth and are very healthy. Pears are a very heavy crop, and the fruit promises well. Plums are a heavy crop on walls, but some standard trees are thinly cropped. Rivers' Early Prolific, Czar, and Merryweather Damson are all good. Cherry trees, both dessert and Morello, produced excellent crops of fine fruits. Nectarines and Peaches are good, the trees clean and healthy and free from blister. Apricots are a thin crop, but the fruits promise to be of good quality and the trees are very healthy. All kinds of small fruit were abundant; the crop of Black Currants was the best we have had for years. Strawberries were good, but the season was short. All kinds of Nuts should be good. The soil here is stiff London clay. *Edwin Beckett, Aldenham House Gardens, Elstree.*

(*To be continued.*)

HOME CORRESPONDENCE.

[The Editors do not hold themselves responsible for the opinions expressed by correspondents.]

Apple Blossom Weevil.—In your issue of August 16, reference is made to Mr. A. M. Massee's careful investigations on Apple Blossom Weevil control. Doubtless through inadvertence, it was not stated that the full data which he has just presented appeared in the latest number of the *Journal of Pomology and Horticultural Science*. Vol. IV, part 1, the Journal which Long Ashton, Cambridge, and East Malling Research Stations maintain as an official medium for the publication of their detailed results in horticultural research. *R. G. Hatton, East Malling, Kent.*

Gardeners and Their Wives.—*Unit* (p. 48) must bear in mind that employers in general have been hard hit through the war as well as the gardener, who is an ex-soldier. In some instances an employer is bound to employ some temporary help in his household, and this is where the assistance of the gardener's wife is almost demanded. But why not employ the chauffeur's or stud-groom's wife? In some cases the low remuneration received by a gardener compels the wife to do something to help obtain the necessaries of life. A good deal of this state of affairs arises from the class of men employed in the places of those experienced gardeners who donned khaki. Many of these so-called gardeners were retained, and it was difficult for a first-class man to get back into a good place, especially if he stood up for his rights and a living wage. The war-time man allowed himself and wife to continue in service with whatever cut in wages the employer liked. Naturally, when this type of man leaves the employer requires his successor and wife to do the same, and it is up to gardeners, where possible, to put an end to this state of affairs. *W. E. Wright, Henstaff Court Gardens, Pontyclun, S. Wales.*

Fertilisation of Apple Blossoms.—In his interesting notes on Early Apples (page 118), *Pomona* makes reference to Beauty of Bath and its conspicuous merits. So far as the general culture of this variety is concerned I know of two faults only against it—unless it is worked on a directly favourable stock it will, like Bramley's Seedling, make splendidly handsome trees which are very slow to produce profitable crops, and on cold, heavy soils, it is very susceptible to attacks of scab fungus, Venturia inaequalis. Your correspondent, however, in reference to its self-sterility recommends Lord Suffield and Worcester Pearmain as valuable neighbours and adds the words "these being situated on the west side." The varieties named are excellent for the purpose in view, but why they should be planted on the west is difficult to understand. I may be in error in my interpretation, but it seems to me to imply that because the prevailing direction of the wind is from the west, the varieties which are to produce the all-important potent pollen must be on that side too to ensure its distribution in the required direction. This is, of course, fallacious. Modern research goes to prove that the wind is a comparatively insignificant factor in the fertilisation of fruit blossoms; and if it were an important one the pollen would be carried equally satisfactorily from other directions. Bees and other insects are the active agents in pollen distribution and certainly it cannot be claimed that they fly always from the west. My experience goes to prove that if the pollen producers are within reasonable distance in any direction of self-sterile varieties, fertilisation will result, provided that other conditions are favourable. *Pomona* will, I am sure, correct me if I have misunderstood him. *W. T.*

SOCIETIES.

ROYAL HORTICULTURAL.

August 26.—The ordinary fortnightly meeting of the Royal Horticultural Society, held at Vincent Square on the above date was not up to the usual standard, although the quality of the exhibits was generally excellent. Two Gold Medals were recommended by the Fruit and Vegetable Committee. The Joint Committee of the National Dahlia Society and the Floral Committee selected no fewer than thirteen new Dahlias for trial at Wisley. Roses and Phloxes were the two principal subjects shown in the groups of hardy flowers.

Orchid Committee.

Present: C. J. Lucas, Esq. (in the chair), Messrs. Gurney Wilson (Secretary), Jas. O'Brien, H. T. Pitt, Henry H. Smith, Arthur Dye, Fred. K. Sander, J. E. Shill, T. Armstrong, E. R. Ashton, A. McBean, Richard G. Thwaites and Stuart Low.

First-Class Certificate.

Cattleya Tagus var. Excelsior (*C. Rhoda* × *C. King George*), from Messrs. Flory and Black, Slough—One of the best formed and brightest coloured Cattleyas of the yellow section yet shown. The flowers are bright canary-yellow with deep red purple front to the lip, which is heavily lined from the base with golden yellow feathered lines. The plant shown was flowering for the first time and may yet improve on its present fine form.

Awards of Merit.

Laelio-Cattleya Mrs. T. Ward var. Majestica (*L.-C. Hiawatha* × *L.-C. Lustre*) from Messrs. Cowan and Co., Southgate.—A very fine and distinct form having large and perfectly formed flowers, with broad, blush-white sepals and petals and finely expanded crimson-purple lip with a yellow blotch on each side of the tube.

Laelio-Cattleya Profusion var. compacta (*L.-C. Serbia* × *C. Hardyana*) from Messrs. J. and A. McBean, Cooksbridge.—A new form of their showy hybrid which proved such an attraction when first shown last year. The spike bore three closely-arranged flowers with bright rosy-mauve sepals and petals and broad, Tyrian-purple lip with cream-white base.

Cultural Commendation.

To Mr. Thurgood (gardener to H. T. Pitt, Esq), Rosslyn, Stamford Hill, for a profusely bloomed plant of the old Maxillaria venusta, with fragrant white flowers with drooping, elongated segments.

Groups.

A Silver Banksian Medal was awarded to H. T. Pitt, Esq., Rosslyn, Stamford Hill, for a pretty group with showy Cattleyas and Laelio-Cattleyas at the back. Among special plants noted were Miltonioda Harwoodii Shrubbery variety, with a fine spike of carmine-crimson flowers: Cypripedium Thaville (Thalia × Earl Tankerville), a finely formed flower with violet base to the dorsal sepal which has a broad white margin; and Miltonia spectabilis extraria of the bicolor section, white with a crimson blotch on the lip. An interesting selection of rare species, was included in this exhibit.

Messrs. Sanders, St. Albans, staged an attractive group the central plant in which was the new Brasso-Laelio-Cattleya Gertrude Fannin (L.-C. brugensis × Digbyana), a large, blush-white flower tinged with mauve and having a broadly developed, rose coloured lip with cream-white base. Two very distinct forms of Cypripedium Godefroyae were shown by this firm, one being the darkest yet seen and very distinct. Among the species shown were Cirrhopetalum pulchrum, Bulbophyllum macrobulbon and other Bulbophyllums; Megaclinium Triste with nearly black flowers: Stanhopea aurea and a curious Listrostachys of the vesicata section.

G. W. Bird, Esq., The Manor House, West Wickham (gr. Mr. Redden), showed the new Brasso-Cattleya Andromeda (B.-C. Digbyano-Warneri × C. armainvillierensis), a showy flower of a bright rosy-mauve tint with a purple line down the lip.

Messrs. Flory and Black, Slough, showed their new L.-C. Fantasia (L.-C. Thyone × C. triumphans), a large, cream-white flower with a profusion of gold lines on the lip, and Cattleya Rubicund (Alexandra × Rhoda), a rosy-lilac variety with purple front to the lip.

Dr. Miguel Lacroze, Bryndir, Roehampton (gr. Mr. Taylor), sent a fine plant of his Laelio-Cattleya Momus Bryndir variety (L.-C. rubens × C. Octave Doin), a noble, rosy-mauve flower, with large, ruby-crimson lip.

Floral Committee.

Section A.—*Present:* Messrs. H. B. May (in the Chair), J. F. McLeod, Andrew Ireland, J. M. Bridgeford, William Howe, W. B. Gingell, Hugh Dickson, Jas. B. Riding, W. Stephens, D. B. Crane, W. P. Thomson, Chas. E. Pearson, and W. D. Cartwright (Secretary).

Section B.—*Present:* Messrs. E. A. Bowles (in the Chair), Geo. Harrow, G. Reuthe, Reginald Cory, G. Yeld, F. G. Preston, W. G. Baker and R. D. Trotter.

Awards of Merit.

Euonymus aff. alatus.—This very pretty species was raised from seed collected by the late Mr. R. Farrer in his expedition to western China in 1914. Seed was sent home by him under the number F. 892, and while closely allied to E. alatus, the name of the species still awaits verification. The beauty of the shrub lies in its capsular fruits which are a delicate shade of pink: the branches are stiff and possess corky wings. The leaves are elliptical and serrate.

Syringa Juliana.—This species is another of Farrer's introductions and possesses white flowers which are highly fragrant. The inflorescence is about four inches long and rather loose.

Syringa Potaninii.—Another western Chinese species with lilac-purple flowers. Both this and the above species flower twice during the year, usually about the beginning of May and again in August. These three shrubs were shown by F. C. Stern, Esq., Goring-on-Sea.

Eucryphia nymansay.—This hybrid was raised between E. pinnatifolia and E. cordifolia. In size the flowers resemble those of the former parent, but with the perfect symmetry of E. cordifolia, the petals fully overlapping. It is an exceptionally pretty shrub, and the bright stamens greatly add to the beauty of the flower. Shown by Lt.-Col. Messel, O.B.E. (gr. Mr. J. Comber), Nymans, Handcross, Essex.

Cotoneaster rubens.—A prostrate-growing species with very ornamental deep red fruits.

Gaultheria pyroloides.—A low-growing shrub with elliptic-obovate leaves about one-and-a-half inch long. It bears attractive pure white, wrinkled, fleshy berries about the size of big Marrowfat Peas. It is a native of the Himalayas and Japan. This and the above shrub was shown by the Director, R.H.S. Gardens, Wisley.

Euonymus yedoensis.—The attractive fruits of this shrub are rosy-pink, deeply four-lobed, and about half-an-inch across. The leaves are obovate and light green.

Pyrus americana nana.—An exceptionally fine form of the American Mountain Ash. The leaves are pinnate and deep in colour and the bright scarlet, round fruits are borne in large bunches.

Clerodendron ugandense.—A greenhouse shrub, the flowers of which are very attractive. The upper petal is a deep violet-blue and forms a pleasing contrast to the paler blue of the other segments. The long, exerted stamens are a violet-blue colour and the foliage is light green. The above three shrubs were shown by the DIRECTOR, Royal Gardens, Kew.

DAHLIAS.

The Joint Dahlia Committee, composed of members nominated by the R.H.S. and the National Dahlia Society, met for the first time this season to consider the merits of a large number of seedlings. The following were selected for trial at Wisley next year:—

Mabel Lawrence.—A mammoth Decorative variety of rich, deep scarlet colour. The blooms measured fully twelve inches across.

Wembley.—The colour of this Decorative variety is old gold, the florets being flushed with salmon towards their tips.

Kitty Rogers.—A magnificent flower belonging to the Decorative section; the colour is blush and the blooms are of large size and good substance.

Snow Bunting.—A white Cactus variety with wiry florets.

Alice Amos.—An extra large white Cactus flower, with its shapely blooms carried on stout, thick stems.

Christine Prior.—Another Cactus variety of very good form and striking colour, the florets having a yellow ground flushed with scarlet.

Berengaria.—A large Decorative bloom; the colour is yellow, shaded with old gold, and the florets are very broad.

Prestige.—A bronzy-gold Decorative flower of large size.

Uncle Dick.—A well formed bloom of bright scarlet colour, the tips of the segments being conspicuously marked with white.

Shiela Ward.—A glorious pale yellow Decorative variety, the broad florets shading to a silvery-white at their apices. The above were shown by Messrs. J. STREDWICK AND SON.

St. Davids.—A miniature Paeony-flowered variety of bright vermilion-scarlet colour. The flowers are about four inches across and carried erect on strong stems. Shown by Mr. A. J. COBB, University College, Reading.

Ulick.—This variety belongs to the Camellia-flowered section. The blooms are of good size and shapely. The colour is white, flushed with lavender-mauve.

Charlwood Star.—A very delightful flower borne on stiff, wiry stems. The colour is an admixture of buff, copper, and scarlet. This and the above variety were shown by Messrs. J. CHEAL AND SONS, LTD.

GROUPS.

A very choice collection of Gladioli was staged by Messrs. KELWAY AND SON, representative of both the Primulinus and large-flowered sections. Included in the former group were Groost, buff-yellow; Maiden's Blush, salmon; Ella Kelway, apricot, and Pinkie, rose; while among the large-flowered varieties were Kelway's Painted Lady, white with rich scarlet centre; Orby, scarlet; Royal Purple and Gunn, rich vermilion (Silver-Gilt Banksian Medal). Mr. ALFRED EDWARDS staged a large group of Gladioli, the flowers being tastefully arranged in baskets and bowls. The group was particularly strong in Primulinus hybrids, and along the back were arranged tall epergnes containing varieties of the large-flowered section. Of these White Giant, Marechal Foch, pink; L'Immaculée, white, and Panama, deep pink, were a few of the best, while among the Primulinus section were Constance, apricot-buff; Alice Tiplady, salmon-scarlet; Souvenir, deep yellow, and Madame Petain, salmon-pink (Silver Banksian Medal).

Messrs. L. R. RUSSELL, Ltd., had a corner group of flowering, berried and ornamental-leaved shrubs, and a feature of the display was the magnificent pot-grown specimens of Vitis vinifera purpurea with its deep bronzy-red foliage and hanging clusters of black berries; Vitis ciotat, possessing neatly cut green foliage, V. heterophylla and V. Henryana were a few other good species of Vines, and the display was brightened with well fruited specimens of Crataegus pyracantha and Clematis in white, blue and rose-purple colours (Bronze Banksian Medal).

Messrs. ISAAC HOUSE AND SON again showed their beautiful varieties of Scabiosa caucasica, including the mammoth-flowered Constancy, deep blue; Edith, pale blue; alba perfecta, white, and Harold, violet-blue. There were also blooms of S. Columbaria rosea of attractive rose colour (Silver Banksian Medal).

Roses were much in evidence and in the display staged by Messrs. D. PRIOR AND SON prominence was given to their novelties Prince Mohamed Ali, a very fragrant Tea variety, with apricot-buff flowers; Elsie Poulsen, a beautiful Polyantha Rose of rich pink colour; and Kirsten Poulsen (Polyantha), with fiery scarlet flowers (Silver Banksian Medal). Messrs. CHAPLIN BROS. showed the new H.T. Innocence, a semi-double bloom with large fleshy, white petals; Golden Emblem; Los Angeles, salmon-pink; and W. F. Dreer, salmon-apricot (Silver Banksian Medal).

The Rev. J. H. PEMBERTON had a comprehensive display of Roses rich in hybrid Musk varieties and a selection of these was Aurora, with large yellow blooms; Moonlight, white; Danäe, deep cream; and Penelope, blush. The new H.T. Rose Mary Monro, pink, and Mermaid, a R. bracteata hybrid, with large sulphur-yellow flowers, were also included in the exhibit (Silver Banksian Medal).

Messrs. WALTER EASLEA AND SONS showed a good selection of Roses of which Frances Gaunt, rich apricot-yellow; Mrs. Henry Morse, silvery-pink; James Walley, salmon-buff; and Mabel Morse, deep yellow, were a few of the best (Bronze Banksian Medal).

Mr. G. REUTHE showed hardy shrubs and flowers and among the former were included a vase of Viburnum rhytidophyllum in fruit. The berries are borne in large clusters and are of bright scarlet colour, changing, with age, to black (Bronze Banksian Medal).

Messrs. SCOTT AND WICKHAM staged a quantity of their new early border Chrysanthemum Phoenix of glowing bronzy-red colour.

Messrs. J. STREDWICK AND SON had a magnificent group of new Dahlias, ten of which were selected by the Dahlia Committee for trial at Wisley. These included Mabel Lawrence (Decorative), a rich, deep scarlet flower, measuring a foot across; Berengaria (Decorative), old gold; and Cactus Dahlia Alice Amos, a fine white flower held on thick stems (Silver Banksian Medal).

Messrs. ALLWOOD BROS. and Mr. C. ENGELMANN showed small groups of perpetual flowering Carnations (Bronze Banksian Medals), and Mr. W. YANDALL again had a bright display of Violas (Silver Banksian Medal). Mr. H. HEMSLEY showed a group of Dahlias and hardy flowers.

An interesting collection of hardy shrubs was staged by F. C. STERN, Esq., Highdown, Goring-by-Sea, including hybrid Veronicas and fruiting branches of Cotoneaster multiflora calocarpa, together with Syringa Juliana and S. Potaninii. Solidago missouriensis, a graceful plant with bright yellow Aster-like flowers was the feature of the exhibit staged by Mr. F. G. WOOD (Bronze Banksian Medal).

A very large collection of herbaceous Phloxes was provided by Messrs. J. CHEAL AND SONS, LTD., and a few of the most outstanding varieties were Selma, pink; Marechal Foch, scarlet; nana coerulea, blue; General Van Heutz, carmine with white centre; and Frau Antony Buchner, white. (Silver Banksian Medal). Messrs. RICH AND CO. also had a unique display of Phloxes, with tall epergnes of Iris, deep blue; Madame Schraler, white; Ostara, pink; Europa, white with pink centre; William Ramsay, deep violet; and Rosamundi, pale pink. The foreground was occupied with small vases of many distinct varieties. (Bronze Banksian Medal).

Fruit and Vegetable Committee.

Present: Messrs. J. Cheal (in the Chair), H. V. Taylor, H. S. Rivers, W. J. Jefferies, G. F. Tinley, S. B. Dicks, A. C. Smith, A. Bullock, E. Neal, G. Kelf, F. Jordan, E. Beckett, J. Basham, W. Bates, W. H. Divers, E. A. Bunyard, H. Markham and A. N. Rawes (Secretary).

Amongst the subjects submitted for award the most interesting was an Apple named Redgate Seedling, shown by Mr. J. ROYCE, Griffen Hill, Danbury, Chelmsford, Essex. This is a very attractive variety with a pale yellow skin suffused with a very faint rosy tinge, the shaded side of the fruit being very pale. The flavour is agreeable, but the flesh is soft and the fruits bruise easily, otherwise the variety might be serviceable as an early market Apple.

Mr. H. R. TAYLOR, Oakleigh, Cheam, showed fruits of the Old Astrachan Apple, a variety with very soft, mealy flesh.

GROUPS.

Messrs. BUNYARD AND CO., Maidstone, exhibited, as a floor group, in the centre of the hall, some sixty trees of Plums representing twenty-three varieties, for which a Gold Medal was awarded. All the trees were bearing excellent crops and they were healthy, shapely specimens. The varieties included Early Transparent Gage, Coe's Golden Drop, Utility, Kirk's Blue, Archduke, Victoria, Monarch, Washington Gage, Giant Prune and the old Greengage.

J. A. NIX, Esq. Tilgate, Crawley (gr. Mr. E. Neal), showed a collection of hot-house fruits, for which a Gold Medal was awarded. There were twenty-four bunches of Grapes, twelve of Black Hamburgh and twelve of Muscat of Alexandria respectively. The Black Hamburgh Grapes were exceptionally fine and the bunches of Muscat of Alexandria were also large and shapely, but the berries needed a little more sun to finish them to perfection. There were also several good Melons including Royal Favourite, Hero of Lockinge, Universal and Jubilee. Peaches included Nectarine Peach, Thomas Rivers, Bellegarde and Grosse Mignonne, and there were several varieties of Nectarine including Pineapple, Spenser and Humboldt. Plums were shown in fancy boxes and included the varieties Victoria, Transparent Gage. Prince Englebert, Dennison's Superb, Belgian Purple and McLaughlin, whilst in the centre were a number of large fruits of Williams' Bon Chrétien Pears.

In the competition for the Bunyard Medal for Plums the only exhibit was staged by Mr. W. R. SCOTT, Bunny Park Gardens. Bunny, who was awarded a bronze Bunyard Medal. He showed seven dishes including Dennison's Superb, Black Diamond, Victoria, Czar and Kirk's.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

THE monthly meeting of the Society was held in the Royal Horticultural Society's Hall on Monday, August 11, Mr. Chas. H. Curtis presiding.

Eight new members were elected. Three members withdrew interest from their deposit accounts amounting to £9 6s. 10d., and the sum of £35 16s. 10d. was passed for payment to one lapsed member. Two members who died within the month had £38 3s. 11d. and £14 19s. respectively standing to their credit, plus the £15 and £20 funeral benefit: these amounts were paid to their respective nominees. The sick pay for the month on the ordinary side came to £51 9s. 5d., and on the State side to £39 2s.; and maternity benefits totalled £12. Five members received grants for dental and optical treatment, which amounted to £15 13s. 10d., and four other claims were considered.

SOUTHPORT FLORAL FÊTE.

August 27, 28, and 29.—Southport—"England's Seaside Garden City"—has scored a magnificent horticultural success in its Floral Fête and set a high-water-mark of extent and excellence which it will be difficult for any provincial show to reach, let alone excel. We doubt whether any other show—always excepting the great International Show of 1912—has ever won, and deservedly won, such unqualified admiration from so many horticultural experts at a first-time effort. Years of painstaking work, backed up by an enthusiasm beyond all praise, have gone to the making of such great shows as those held at Shrewsbury, York, Wolverhampton, Edinburgh, and elsewhere, but Southport has come to the forefront at one bound.

The Corporation is to be congratulated upon its pluck, its gigantic effort, and its gigantic horticultural success. Even Chelsea must look to its laurels.

Evidence of the extreme optimism of the Floral Fête Committee may be found in the fact that even at so early a date as the publication of the schedule no fewer than thirty-four judges had been engaged. That this optimism was well founded may be gathered from the bare statement of fact that the show was about one-quarter greater in extent than the famous Shrewsbury show reported in our issue of August 16.

This great first-time show was held in a huge four-ridged tent of the kind now familiar to those who regularly attend the Chelsea Shows; but yet another ridge had to be added, and each of these five spans was 260 feet long by 46 feet wide. One other big tent, 240 feet long and 40 feet wide, had been erected for the accommodation of the Railwaymen's Show on August 23rd, but this also had to be utilised for the fête to accommodate many of the cut-flower classes and vegetable exhibits. It must not be concluded, however, that what were practically six huge tents held the whole of the display, indeed a large set of rock garden exhibits was arranged out-of-doors against a background of trees and shrubs, while numerous small tents were filled with interesting exhibits from the horticultural press and sundriesmen.

The show was opened with great eclât by the Lord Mayor of Liverpool, who was supported by so many as thirty-five Mayors and Mayoresses of towns in the neighbourhood, including Shrewsbury. These Chief Magistrates and their wives, the judges and principal exhibitors were entertained to lunch at the Prince of Wales Hotel on the opening day.

Groups.

There were three fine entries in the class for a group of flowering and foliage plants arranged for effect on a space of three hundred square feet. The premier award was a Silver Challenge Trophy, valued £50, presented by the Southport Theatres, Cinemas and Variety Halls, together with £50 in cash. This handsome prize was won by Messrs. J. Cypher and Sons, Cheltenham, with a particularly elegant and pleasing exhibit in which grace and colour were most artistically combined. The background of Codiaeums, Humea elegans, hybrids of Fuchsia triphylla, Aralias and Palms was one of the best this firm has arranged. Fine examples of Lilium auratum and L. speciosum rose well above the plants used in the body of the display and harmonised well with the elegant drooping-leaved Codiaeums, and these in themselves made a fine feature. In the foreground the most notable subjects were Cypripedium Maudiae, C. Lawrenceanum Hyeanum, Odontoglossums in variety, some capital Laelio-Cattleyas, Gesneras and Nerines. Small Codiaeums, Rex Begonias, and Selaginellas made a pleasing margin to a beautiful group. Mr. W. Holmes, Chesterfield, won second prize and evidently lost some points by the too free use of fine Codiaeums; third, Mr. J. Petch, Bradford.

Messrs. J. Cypher and Sons' group in this class was judged to be the finest exhibit in the whole competitive classes and on this account was awarded the Sir John Brunner Challenge Trophy, valued at £50. We congratulate the Cheltenham firm upon its success.

Four competitors came forward in the class for a group of foliage plants arranged on a space of 250 square feet, and here the principal award of £35 was won by Mr. W. Holmes with a display in which finely grown Codiaeums formed the leading feature; with these brilliant hued plants were associated Alocasias, Anthuriums, Dracaenas, Palms and Nandina domestica, while the margin of tiny Codiaeums, Fittonias, variegated Saxifraga sarmentosa, Rex Begonias and Ferns was very pleasing. Messrs. J. Cypher and Sons gained second prize, and some lack of colour in their background was no doubt a weakness; third, Mr. Petch; extra prize, Mr. J. A. Anderson, Southport.

Messrs. J. Cypher and Sons were the only exhibitors of fifteen stove and greenhouse plants and they were deservedly awarded the first prize for their handsome examples of Lilium speciosum, L. s. album, Statice intermedia, Acalypha hispida, Ixora Williamsii and Draceana Victoria.

Hardy Flowers.

Two particularly good classes were provided for the display of hardy flowers and the Silver Trophy presented by the Southport Chamber of Trade had to be awarded to the finest exhibit in the two Classes. It was awarded to Messrs. Bees whose group was of such outstanding excellence that there was no cavelling at the award.

The first of these classes was for a collection of cut flowers or pot plants, or both, of perennials and hardy herbaceous flowers, Gladioli, Montbretias, Liliums, and ornamental grasses. There were two competitors and Messrs. Bees Ltd., Liverpool, scored a great success by winning the first prize of £20 and as already stated, the Challenge Cup also. Theirs was a noble effort and flowers of splendid quality were arranged boldly and artistically; there was no crowding and the exhibit was altogether magnificent. Some of the leading subjects were White Giant Gladiolus, Lilium Henryi, L. auratum, Kniphofia C. M. Prichard, Crinum Powellii, Scabiosa Busy Bee, Hollyhocks, Papaver Mrs. Perry, and Phloxes. Messrs. M. Prichard and Sons, Christchurch, were awarded second prize for a fine group that was a trifle flat as compared with its competitor's; it contained fine examples of the graceful Poterium obtusum, Kniphofia Mount Etna, Crinum Powellii, Lilium tigrinum splendens, L. speciosum Thalictrum dipterocatpum, and Agapanthus umbellatum album.

In the next class the space allowed was also 300 square feet, and here the competitors were expected to stage "appropriate cut blooms for the embellishment of a flower border." There were three entrants and each had a good exhibit, but the best one was from Messrs. Harkness and Son, Bedale, who made a brilliant display with Gladioli, Lilium Henryi, Gaillardias, Lupins, Pyrethrums, Iceland Poppies, Phloxes, Moon Daisies, Coreopsis and other handsome autumn flowers; second, Messrs. G. Gibson and Co., Leeming Bar; third, Messrs. W. Artindale and Son, Sheffield.

Dahlias and Gladioli.

The challenge trophy and £12 offered as first prize for a collection of Dahlias arranged on a space 40 ft. by 4 ft., and not to exceed 7 ft. in height, was won by Messrs. Dickson and Robinson, Manchester, with an artistic display of capital flowers; the background consisted of elegant columns of Collerette, single and small decorative varieties; overhead were hanging baskets of Cactus varieties, while vases and yard-high stands occupied the foreground. Such varieties as Calderdale (collerette), Elsie Jackson (cactus), Barlow's Bedder (decorative), and Treasure (single), were outstanding. Second prize was won by Mr. H. Woolman, Shirley, Birmingham, for a very effective display in which cactus and large decorative varieties were splendidly shown; Gypsophila was used rather too freely in this and also in the third prize collection from Messrs. Jarman and Co., Chard; the latter used baskets of cactus varieties effectively, but the small bouquets of four flowers each were a distinct weakness in the background.

Gladioli formed a very attractive feature of the show and two large classes were provided for them. In one of these Primulinus hybrids alone were allowed and competitors had to set up an arrangement for effect on a space 30 feet by 4 feet. Such long spaces must have been a considerable tax on competitors, but these came out nobly, indeed there were five entries. Sir Albert Stevenson's cup and £12 offered as first prize was won by Messrs. W. Artindale and Son with a pleasing arrangement of good spikes; this firm set up most of their flowers in artistic baskets, with a few small vases intervening. Conspicuously good were their baskets of Buttercup, Apricot, Maiden's Blush, Kitty Guillemans and Cream Rose; the Sheffield firm had about three dozen receptacles filled but not crowded with fine spikes. Messrs. Bees, Ltd., won second prize with a handsome lot of flowers and possibly had many finer spikes than were in the premier exhibit, but the display was not so effective; third, Messrs. Lowe and Gibson, Crawley Down, Sussex, who had the prettiest exhibit, a very dainty affair, but a trifle "thin" and lacking in effect along the back line; Messrs. R. H. Bath, Wisbech, were awarded an extra prize.

Four exhibitors came forward in the class for a collection of large-flowering Gladioli arranged on a ground space of 100 square feet. Mr. Joseph Lloyd, Birkdale, staged a fine exhibit of grand spikes of Perfection, White Giant, Red Canna, Yellow Standard, Prince of Wales and other fine varieties, and set them up in a pleasing and natural fashion; second, Messrs. W. Artindale and Son, who had grand spikes boldly staged; third Messrs. M. Prichard and Sons.

Roses.

A gorgeous display was provided by the four grand entries in the class for a collection of cut Roses arranged on a space 40 feet by 4 feet. The premier award was a Silver Challenge Trophy, a Gold Medal and £20, and these well worth striving for. This omnibus prize was awarded to Messrs. S. McGredy and Son, Portadown, for a bright exhibit, in which pillars and baskets, bowls and vases of fresh and bright flowers were pleasingly arranged. Outstanding varieties were Captain Ronald Clerk, Golden Emblem, Ethel Malcolm, Desmond Johnston, Mrs. H. Morse, Eva Eakins (deep flame colour), Lady Pirrie, Old Gold, Mabel Morse, and Mme. Herriot. Second prize was made in favour of Messrs. Alex. Dickson and Sons, Newtownards, who must have run the Portadown exhibit very closely for first place; they staged many of their blooms in big artistic vases, and their leading varieties were Lady Pirrie, Independence Day, Elizabeth Cullen, Fred Harrison, Betty Uprichard, Shot Silk—a glorious Rose, which was awarded the Gold Medal as the best new variety shown at Southport—Sunstar, K. of K., Ophelia, and Lady Inchiquin. Third—Messrs. Bees, Ltd., who used brightly coloured varieties to great advantage.

The finest exhibit in an extra class for a group of Roses was adjudged to be the one staged by Mr. Thomas Robinson, Nottingham. This was a brilliant exhibit with a big basket of blooms of Lady Inchiquin forming the central feature, while other outstanding items were the pillars of Emma Wright, Los Angeles, K. of K., W.

E. Dreer, Independence Day, Betty Uprichard, and The Queen Alexandra; second, Messrs. WHEATCROFT BROS., Gedling, Notts; third, Mr. SANDY DICKSON, Dundonald, Belfast.

First prize for three baskets of Roses was won by Messrs. ALEX. DICKSON AND SONS, with large flowers of Lady Inchiquin, Betty Uprichard, and Mme. Ravary; second, Messrs. WHEATCROFT BROS.—the stewards had in this and one or two other classes placed the prize slips on the back of the class cards instead of on the front.

ROCK GARDENS.

The exhibits in the Rock Garden Class filled a considerable space and the exhibits proved an immense attraction. The first prize, to be won outright, was a silver trophy value £25 and £75 in cash, was won by Messrs. T. R. HAYES AND SON, Keswick, with a tasteful garden which, owing to the lateness of the season was not so florally bright as a similar exhibit would be in the spring; it was, nevertheless a fine exhibit, a kind of low ravine with a central stream of water. Alpine shrubs, Heaths, Campanulas and Gentians were the leading plants used; Second Messrs. CLIBRANS LTD.

AWARDS TO TRADE DISPLAYS.

The Mayor of Southport's Cup for the finest non-competitive trade exhibit. To Messrs. SUTTON AND SONS, for flowers and fruits.

Large Gold Medal.—To Messrs. BAKERS, Wolverhampton, for alpine and formal garden: to Messrs. JAS. CARTER AND CO., for vegetables; to Messrs. DICKSON AND ROBINSON, Manchester, for Gladioli, Liliums, etc.: to Messrs. DOBBIE AND CO., Edinburgh, for Dahlias; to Messrs. FELTON AND CO., Hanover Square, for floral designs; to Mr. H. J. JONES, Lewisham, for Phloxes; to Messrs. J. PEED AND SON, Norwood, for greenhouse plants: to Messrs. T. RIVERS AND SONS, Sawbridgeworth, for fruit trees in pots; to Messrs. SUTTON AND SONS, Reading, for flowers: and to Messrs. E. WEBB AND SONS, Stourbridge, for vegetables and flowers.

Small Gold Medal.—To Messrs. ALLWOOD BROS., Haywards Heath, for Carnations; to THE DONARD NURSERY CO., Newcastle, Co. Down, for rare shrubs and flowers; to Messrs. JOHN FORBES, for florists' flowers; to GARDEN SUPPLIES, LTD., Liverpool, for Alpines, Roses, etc.; to Messrs. T. R. HAYES AND SONS, Keswick, for Heather Garden; to Messrs. HERD BROS., Penrith, for Sweet Peas; to Messrs. ISAAC HOUSE AND SON, Bristol, for Scabious; to Mr. JAMES MACDONALD, Harpenden, for a Grass Garden; to Mr. AMOS PERRY, Enfield, for Hardy Flowers and Ferns; to Messrs. L. R. RUSSELL, LTD., Richmond, for stove and greenhouse plants; to Mr. K. THIRKELDSON, Kew, Southport, for formal garden; to Messrs. TOOGOODS, LTD., Southampton, for flowers and vegetables; to Messrs. JAS. VERT AND SONS, Saffron Walden for Hollyhocks; and to Mr. W. WELLS, JUNR., Merstham, for Hardy Flowers.

Silver Medal.—To Messrs. BLACKMORE AND LANGDON, Bath, for Begonias; to Messrs. BOWELL & SKARRATT, Cheltenham, for alpines; Messrs. DANIELS BROS., Norwich, for Black Currants; to Messrs. E. FAIRBAIRN AND SONS, Carlisle, for Phloxes and Dahlias; to Messrs. HEWETT AND CO., Solihall, for hardy flowers; to Messrs. P. JOHNSON AND SON, Southport, for alpines; to Messrs. JONES BROS., Liverpool, for hardy flowers, to Messrs. JONES BROS., Shrewsbury, for Carnations; to Mr. KEITH LUXFORD, Harlow, for Chrysanthemums; to Mr. R. LAWRIE, Carnwath, for Begonias.

The Gardeners' Chronicle Silver Gilt Medal was won by the Viscount HAMBLEDON, Henley, with a fine exhibit of vegetables.

[Distance and limitation of time and space prevent us from presenting a full report in this issue; we hope to continue our notes in the issue of September 6.—EDS.]

BANFFSHIRE HORTICULTURAL.

AUGUST 13.—Since its institution, 71 years ago, this association has never had a finer show than that held in the Princess Royal Park, Banff, on the above date. The entries in all sections showed a considerable increase compared with former years, and the quality of the exhibits generally reached a very high standard. Professional and amateur gardeners were well represented. Nina, Countess of Seafield opened the proceedings; the weather was delightful and it is computed some 5,000 visitors attended.

The outstanding feature was the magnificent display of Sweet Peas sent in by Mr. J. A. GRIGOR, Duff House, a mansion, with its fine gardens, presented to the inhabitants of Banff some years ago by the late Duke of Fife. After his fine performance at Glasgow, it was no surprise to find Mr. GRIGOR had no compeer here. He won the Silver Challenge Cup with 12 vases of superb specimens, and practically carried off every leading prize in the section. In the amateur section, Mr. W. G. STRONACH, Fife-Keith, worthily won the Silver Rose Bowl with six fine bunches of Sweet Peas of not more than ten spikes, distinct varieties.

Among the other principal professional prize-winners whose fine exhibits earned the warmest encomiums of visitors, were Mr. GEORGE TROUP, Minmore; Mr. JAMES MCDONALD, Dunlugas; Mr. A. CRAIB, Fife Arms, Banff; Mr. JOHN W. FINDLAY, Park; and last, but not least, Mr. JAMES MCLENNAN, Eden House, all of Banffshire.

Pot plants, cut flowers, and fruit were well shown, leading prizes going to the large mansion houses around. Among amateurs, Mr. JOHN MANN, Banff, was a leading prize winner, including a number of specials and also the Silver Cup for eighteen Carnations, not fewer than six varieties, open to professionals and amateurs. The Bronze Medal for the best collection of hardy fruits was also won by Mr. MANN.

Vegetables were very fine, and reflected the highest credit on all concerned. In the amateur section, the Royal Burgh of Banff Challenge Trophy for the most points in 23 classes of vegetables was won by Sergeant THOMSON, Banff, with a wonderfully good selection.

Banffshire may well be proud of its horticultural sons, for it was Thomas Reid, a Banff gardener, who laid out the much admired grounds of Cullen House, the chief Scottish seat of the Seafields. Warm praise is due to Mr. John Mann, secretary, for his fine organising abilities.

NORTHAMPTON HORTICULTURAL.

AUGUST 6 and 7.—The ninth annual Floral Fête and Exhibition of the Northampton Municipal Horticultural Society which was held in Abington Park, was a great success. Year by year the show increases in size and importance, and it has now become one of the most attractive events of its kind in the Midland Counties. Ample proof of this is afforded by the fact that a goodly number of traders provided magnificent displays. This years' show created a record, the entries numbering nearly 1,000.

In the open classes the exhibits reached a very high standard of excellence. Among the chief exhibitors were Captain R. B. BRASSEY, Cottesbrook; Sir A. K. MUIR, Dowager LADY ANNALY, Mr. J. H. MARLOW, Commander ALEXANDER (Lubenham), Mrs. GUTHRIE, East Haddon and Mr. MCGRATH, Barnwell Castle.

Gold Medals were awarded to the following:—Messrs. DANIELS BROS., for cut blooms; Messrs. JOHN PEED AND SON, for Caladiums, etc.; Mr. W. J. UNWIN, Histon, who received two gold medals for superb collections of Gladiolus primulinus hybrids; Messrs. THOMAS PERKINS AND SONS, for cut flowers and rock plants; Messrs. BAKERS, for herbaceous plants and flowers; Messrs. BLACKMORE AND LANGDON, for Begonias and Delphiniums; Mr. W. H. WOOLMAN, for Carnations.

Silver Medals were awarded to Messrs. LACK, for flowering and foliage plants; Messrs. ISAAC HOUSE AND SON, for Scabious; Messrs. RAMSBOTHOM AND CO., for Roses; and to Mr. H. N. ELLISON, for Ferns and Cacti.

The Wren Challenge Cup, value fifty guineas, offered for Sweet Peas was won by Messrs. E. KING AND CO., Coggeshall, who won first prize for a group of Sweet Peas for the third successive year. The Wren Cup for Roses was won by Mr. ELISHA J. HICKS. Mr. C. ENGELMANN secured the Wren Cup for perpetual-flowering Carnations.

In the Amateurs' Classes' special mention must be made of Mr. C. KITCHENER, of Olney, who achieved remarkable success in his display of vegetables. He won the Bostock Challenge Cup for the best collection in the show

OPEN CLASSES.

For a group of flowering and foliage plants arranged for effect, Mr. W. A. HOLMES, Chesterfield, won first prize, and Messrs. H. E. and W. LACK, Wellingborough, second. Mr. HOLMES was also premier prize-winner for a decorated dinner table; second, Miss E. CURTIS, Abington Park,; third, Mr. G. BURCH, Peterborough.

For thirty-six Roses, Mr. G. BURCH was first; second, Messrs. PEACH AND STONE, Newport, Pagnell. Mr. E. J. HICKS had the best eighteen Roses; Mr. G. BURCH, second; Messrs. T. PERKINS AND SONS, third. For a basket of Roses, the awards were secured in order of mention by Mr. G. BURCH, Mr. E. J. HICKS and Messrs. H. E. and W. LACK. The Misses RUSSELL, Canterbury, were most successful for Sweet Peas; second, Mr. R. B. BRASSEY, and third, Mrs. MCGRATH, Peterborough. For hardy perennials, Mr. GEORGE ADAMS, Kettering; Messrs. T. PERKINS AND SONS, and Messrs. PEACH AND STONE, were the successful competitors.

For a dining table decorated with Sweet Peas, Miss GLADYS BURT, Coggeshall, led; Mrs. KING KEMPSTONE, second; Miss M. CURTIS, third. H. WOOLMAN, Shirley, had the best collection of Carnations; second, Capt. R. B. BRASSEY; third, the DOWAGER LADY ANNALY.

In the fruit classes the most successful exhibitors were Mrs. GUTHRIE, Capt. R. B. BRASSEY and the DOWAGER LADY ANNALY, while in the vegetable section Mr. C. KITCHENER, Captain R. B. BRASSEY and Sir A. K. MUIR, won numerous prizes.

TRADE NOTE.

THIS year, within five weeks, The Nurserymen Market Gardeners' and General Hailstorm Insurance Corporation, Limited, lost through deaths three of the most prominent officials in the persons of Sir Harry J. Veitch, Chairman of the Company, also a Director and Trustee; Mr. James Sweet of Whetstone, the originator of the Company, a Director for many years, and a Trustee until his death; and Mr. Robert Piper, one of the founders and for twenty-nine years a Director. The new Trustees are Mr. George Shawyer, of Messrs. Lowe and Shawyer, of the Nurseries, Uxbridge, and Mr. Raymond Rochford, son of the late Mr. John Rochford and a Director of Messrs. John Rochford and Sons, Ltd.. The new Directors are Mr. Edgar Piper, son of the late Mr. Robert Piper, ex-mayor of Worthing and one of the largest growers on the south coast, and Mr. J. B. Slade, of the firm of Messrs. Protheroe and Morris. Mr. Henry B. May, one of the founders of the Corporation, has been appointed Chairman in the place of Sir Harry J. Veitch, and Major Edwin George Monro, son of the late Mr. George Monro, Deputy Chairman. Major Monro has been a Director in his father's place for the past four years, and is well known as chairman of the firm of Geo. Monro, Ltd.

MARKETS.

COVENT GARDEN, Tuesday, August 26, 1924.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated.)

	s. d. s. d.
Adiantum cuneatum per doz.	10 0-18 0
—elegans	10 0-12 0
Aralia Sieboldii	9 0-10 0
Araucarias, per doz.	30 0-42 0
Asparagus plumosus	12 0-15 0
—Sprengeri	12 0-18 0
Aspidistra, green	48 0-72 0
Asplenium, per doz.	12 0-18 0
—32's	24 0-30 0
—nidus	12 0-15 0
Asters, 48's, per doz.	9 0 10 0
Cacti, per tray, —12's, 15's	5 0-7 0
Chrysanthemums, 48's, per doz.	9 0-15 0
Crotons, per doz.	30 0-42 0
Cyrtomium	10 0-15 0

	s. d. s. d.
Lilium lancifolium rubrum, 24's, 32's, per doz.	30 0-42 0
—album, 24's, 32's, per doz.	36 0-42 0
Marguerites, white, 48's, per doz.	6 0-9 0
Nephrolepis, in variety	12 0-18 0
—32's	24 0-36 0
Palms, Kentia	24 0 30 0
—60's	15 0-18 0
—Cocos	24 0-36 0
Pteris, in variety	12 0 21 0
—large 60's	5 0-6 0
—small	4 0-4 6
—72's, per tray of 15's	3 6-4 0
Roses, Polyantha, 48's, per doz.	15 0 21 0
Spiraea, pink, 24's, 32's, per doz	24 0-30 0
White Heather, 48's	18 0-24 0
—72's	8 0-9 0

Cut Flowers, etc. Average Wholesale Prices.

	s. d. s.d.
Adiantum decorum, doz. bun.	10 0-12 0
—cuneatum, per doz. bun.	6 0-9 0
Asparagus plumosus, per bun.	
long trails, 6's	4 0-5 0
med. sprays	2 6-3 6
short „	1 0-1 6
—Sprengeri, per bun.	
long sprays	3 0-3 6
med. „	1 6-2 6
short „	1 0-1 3
Asters, white, per doz. bun.	4 0-6 0
—coloured, per doz. bun.	5 0-6 0
—coloured, single per doz. bun.	3 0-5 0
Carnations, e doz. blooms	1 6-3 0
Chrysanthemum maximum, per doz. bun.	2 6-3 6
—White, per doz. blooms	3 0-6 0
—Yellow, per doz. blooms	4 0-6 0
—Bronze, per doz. blooms	2 6-3 0
—White, per doz. bunches	8 0-12 0
—Yellow, per doz. bunches	6 0-9 0
—Bronze, per doz. bunches	10 0 12 0
Coreopsis, per doz. bun.	1 0-1 6
Cornflowers, per doz. bun.	2 0-2 6
Croton leaves, var., doz. bun.	2 0 2 6
Fern, French, per doz. bun.	1 0-1 3
Gaillardia, per doz. bun.	2 0-3 0
Gardenias, per box, 12's	4 0 6 0
Gladiolus—	
—The Bride, per doz. bun.	9 0-15 0
—salmon, per doz. spikes	1 6-3 0
—scarlet, per doz. spikes	1 6-3 0
—pink, per doz. spikes	1 6-3 6
—white, per doz. spikes	3 0-4 0
Gypsophila per doz. bun.	— —
—paniculata, per doz. bun.	9 0-12 0
Heather, white, per doz. bun.	9 0-12 0

	s. d. s.d.
Lavender, per doz. bun.	3 0-9 0
Lilium auratum, per doz.	3 0-4 0
Lilium lancifolium album, per doz. blooms	2 6-3 6
—rubrum long, per doz. blooms	2 0-2 6
—short „ „	1 0-1 6
Lilium longiflorum long, per doz.	5 0 5 6
short „ „	5 0-6 0
Lily of the Valley, per doz. bun.	24 0-30 0
Orchids, per doz.	
—Cattleyas	24 0-30 0
Pelargonium, white, per doz. bunch	8 0-9 0
Physalis, per doz. bunches	9 0-15 0
Roses, Richmond, per doz.	1 6-2 6
—Frau Karl Druschki, per doz.	1 0-2 6
—Mme. Butterfly, per doz. blooms	2 0-3 0
—white, per doz.	2 0-3 0
—Columbia, per doz.	1 6-3 0
—Ophelia, per doz.	1 6-2 6
—Sunburst, per doz.	2 0 2 6
—Mme. Abel Chatenay	1 6-2 6
Statice, mauve	4 0 6 0
— sinuata, white, per doz. bun.	4 0-6 0
— sinuata, yellow, per doz. bun.	5 0-6 0
— latifolia, per doz. bun.	6 0-8 0
— incana, per doz. bun.	4 0-6 0
Stephanotis, per 72 pips	— 3 0
Sweet Peas, per doz. bun.	3 0 6 0
Smilax, per doz. trails	4 0-5 0
Scabiosa caucasica, per doz. bun.	2 0-2 6
Stock, double white, per doz. bun.	6 0 8 0
Sweet Sultan, mauve, per doz. bun.	3 0-4 0
—white, per doz. bun.	3 0-4 0
Tuberoses, per packet 24's	1 6-2 0
Violas, per doz. bun.	2 6-3 0

REMARKS.—In spite of the labour trouble the supplies in this department have been sufficient to meet all requirements and prices have remained normal. Supplies sent by rail have occasionally been delayed but large quantities have been reaching the market by road transport and practically the usual consignments have been dispatched to provincial towns. Chrysanthemums are increasing in quantity and all grades of the flower are improving in quality, both disbudded blooms and spray in bunches. White, yellow, pink and bronze sorts are available. The best disbudded sorts are Duchess, Sanctity (white), Mercedes (yellow), Mrs. J. Pearson (bronze); sprays of Rio de Blanc (white), are very useful to florists. Lilium longiflorum is again cheaper owing to the increased supplies. The quantities of L. lancifolium album and L. l. rubrum are sufficient for present requirements. A few Lilium auratum are on sale in excellent condition. Physalis, like Chrysanthemums, has improved in quality during the past week and much larger supplies are available. Asters, both white and coloured, are also arriving in large quantities. Other subjects are similar to those recorded last week, and so far there is nothing fresh to record.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, French, ½-bushel	1 0-2 0
—Scarlet Runners per bushel	1 6-2 6
Beets, new, per doz. bun.	2 0-3 0
Cabbage, per doz.	0 6-1 0
Cucumber, 3 doz., 3½ doz., 4 doz.	8 0-14 0
—Dutch, doz.	2 0-3 0
Endive, per doz.	2 6-3 6
Green Artichokes, doz.	1 0-1 6
Greens, bag	1 6-2 0
Lettuce, English, round, per doz.	0 6-1 0
—long, per doz.	1 0-1 6
Marrows, doz.	0 7-1 0
Mint, doz.	3 0-4 0
Mushrooms, lb.	
—"Cups"	2 6-3 6
—broilers	2 0-2 6

	s. d. s. d.
Onions, Valencian, cases	
4 tier	8 0-8 6
5 tier	10 6-11 0
Parsley, flat	2 0-3 0
Potatos, English, cwt.	6 0-7 0
Peas, bushel	2 0-3 0
—bags (70 lb.)	3 0-5 0
Spinach, bushel	1 6-2 6
Spring Onions, per doz. bun.	3 0-4 0
Tomatos, English, pink	4 0-5 0
pink and white	4 6-5 0
— blue	3 0-4 0
— white	3 0-4 0
—Guernsey	3 0-4 0
—Dutch	2 9-3 0
Turnips, new, per doz. bun.	2 0-3 0

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
English, per bushel	
—Grenadier	7 0-10 0
—Lord Derby	7 0-10 0
—Lane's Prince Albert	8 0-10 0
—Worcester Pearmain, ½ bushel	6 0-10 0
—Beauty of Bath ½-sieve	6 0-12 0
Bananas, singles	13 0-19 0
—doubles	20 0-22 6
Cantaloupes, French, each	3 0-6 0
Figs, English, per doz.	3 0-6 0
Grape Fruit	20 0-25 0
Grapes—	
—Canon Hall	2 6-4 6
—Gros Colmar	2 0-3 0
—English Black Hamburgh, per lb.	1 6-2 0
—Belgian Black Hamburgh	1 6-2 0
—Alicante	1 4-3 0
—Muscats	2 6-5 0
Greengage, Spanish ½-sieve	5 0-12 0

	s. d. s. d.
Lemons, **Messina**	
360	10 0-12 0
300	12 0-15 0
150	8 0-10 0
Melons, Guernsey	1 6-2 6
—Spanish, case	8 0-15 0
—South African Naatjes	3 6-4 0
Nectarines	3 0-15 0
Oranges, Spanish, per case	16 0-35 0
—South African Navel	16 0-20 0
—Seedling	17 0-18 0
Peaches, Belgian, per doz.	3 0-6 0
—English	3 0-15 0
Pears, French William's Bon Chrétien, 48's	3 0-3 3
—crates	6 6-7 6
Pines, each	3 0-7 6
Plums,	
—English, Czar	6 0-7 0
—Victoria	8 0-10 0
—Belle d'Louvain	8 0-10 0
—Prince of Wales	8 0-9 0
Raspberries, per lb.	0 4-0 8

REMARKS.—Although the strike has caused a certain amount of inconvenience a considerable volume of business has been and continues to be transacted. Values keep at a reasonable level, and so far the public are in no way the losers. Prospects of an amicable settlement seems, at the time of writing, as far off as ever.

GLASGOW.

The diversion of produce that was expected to follow the Covent Garden strike did not materialise except in the case of Tomatos, and as a result of the increased supplies the price of the English fruit dropped to 4d. per lb. Scotch Tomatos were also cheaper at 8d. to 9d. for special and 6d. to 8d. for ordinary, while British only realised 3d. per lb.

. Supplies of other commodities were normal, and a good trade was reported at steady prices. Plums were plentiful but the quality was mixed, some of the consignments being in an over-ripe condition. Czar realised 7/- per half bushel and 5/- per chip; Black Diamond 8/- per sieve; and Victoria 16/- per half bushel. Apples found a ready sale at 3½d. per lb. for Beauty of Bath, and 18/- per case for Gravenstein. French Pears continued cheap at 12/- per crate of 72 and 64, while William's Bon Chrétien brought 4/6 per case and Wine Pears 9/- per barrel. Cherries are now finished, and small quantities of Strawberries sold at 8d. to 10d. per lb. Raspberries ranged from 6d. to 9d. per lb.; Black Currants 1/- to 1/1 per lb.; Red Currants, 5½d. per lb. Gooseberries sold at 2½ per lb. and Cherry Plums 7/- per sieve.

Cut flowers were steady at the lower prices ruling of late. Carnations ranged 1/3 to 1/6 per dozen; Mme. Abel Chatenay and Butterfly Roses 1/6 to 2/6; Gladioli (large), 6d. to 10d. for 6's. Sweet Peas, 2d. to 6d. per bunch; Marguerites, 2d. to 3½d.; Statice, 2/- to 6/- per dozen; Asters (special), 6d. to 8d. per bunch; Gypsophila (special), 5d. to 6d., and White Heather, 6d. to 9d. Chrysanthemums are becoming very plentiful and disbudded specimens commanded 2/- for 6's; Holme's White, locally grown, brought 4d. to 6d.; bronze and pink, 3/- per dozen; and yellow 2/6. Lilium Harrissi was scarce and sold at 5/- per dozen.

The vegetable market was well supplied with all kinds of produce and a large trade was done at remunerative values. Cucumbers averaged 6/- per dozen; Cauliflowers, 4/6 to 6/-; French Beans 5d. to 6d. per lb., and Peas 3d per lb.

ANSWERS TO CORRESPONDENTS.

ANTIRRHINUMS DISEASED: *F. P.* There is no definite disease present on the plants sent. We should like to see some of the hundred plants which have gone off and were further advanced with the attack. It may be Phyllosticta Antirrhini at the collar, or possibly a Verticillium wilt. In any case it appears that the trouble comes from the soil and short of sterilising that there is not much that can be done except to keep Antirrhinums away from those particular spots for a time. Watering with Cheshunt compound might check the spread of the disease to healthy plants.

GARDENERS' NOTICE TO QUIT. *J. T.* It has been held in the High Court that a head gardener is to be regarded as a domestic servant because his service is of such a domestic nature as to require his being frequently about his master's grounds. You are therefore entitled to four weeks' notice and should give up possession of the cottage at the end of the four weeks. If you do not your employer would be entitled to take ejectment proceedings, but he would not be justified in doing so until your proper notice has expired.

GREEN MATTER ON WATER IN FOUNTAIN BASIN: *S. H. H.* As the fountain basin is a small one, we suggest that you thoroughly cleanse it and then by means of a hose recharge it with water about twice a week. The fungus on the gold fish is a fish disease and has nothing to do with the green matter in the water.

NAMES OF PLANTS: *J. T. S.* Acaena microphylla; 2, A. sarmentosa; 3, A. Buchananii; 4, A. inermis; 5, Cotula squalida; 6, Sedum album; 7, S. album variety; 8, S. Anacampseros; 9, S. spurium; 10, S. spurium variety; 11, Tropaeolum polyphyllum; 12, Helichrysum bellidioides; 13, Campanula carpatica; 14, Potentilla ambigua; 15, Epilobium nummularifolium. *P. P.* Lychnis dioica var. flore plena. *F. B. B.* 1, Erigeron canadensis; 2, Melilotus officinalis; 3, probably Ornithogalum nutans. *R, L.* 1, Genista hispanica (Spanish Gorse); 2, Potentilla fruticosa; 3, Aegle sepiaria; 4, Thuya plicata; 5, T. occidentalis; 6, Coronilla Emerus. *G. S.* 1, Olearia Haastii; 2, Glyptostrobus heterophyllus; 3, Ginkgo biloba; 4, Pinus Banksiana; 5, Elaeagnus pungens. *J. G.* 1, Rhus Toxicodendron; 2, R. Cotinus; 3, Veronica longifolia. *Correspondent.* Catalpa bignonoides. *A. B.* A, Lysimachia vulgaris; B, Artemisia lactiflora; C, Tradescantia virginica; D, Spiraea Douglasii; E, Woodwardia radicans. *F. P.* 1, Acanthus mollis; 2, Platycodon grandiflorum variety. *C. F.* 1, Cornus Mas, var. variegata; 2, Diervilla florida var. Looymansii; 3, Cornus sanguinea var. variegata; 4, Polygonum sachalinense; 5, Spiraea ariaefolia; 6, Kerria japonica var. flore pleno.

Communications Received.—J. R.—A. R. S.—S. P. S.—H. C.—M. K.—R. G.—A. B.—E. T. S.—I. N.—B. J. F.—R. D.—J. S.—M. & Co.—F. T.

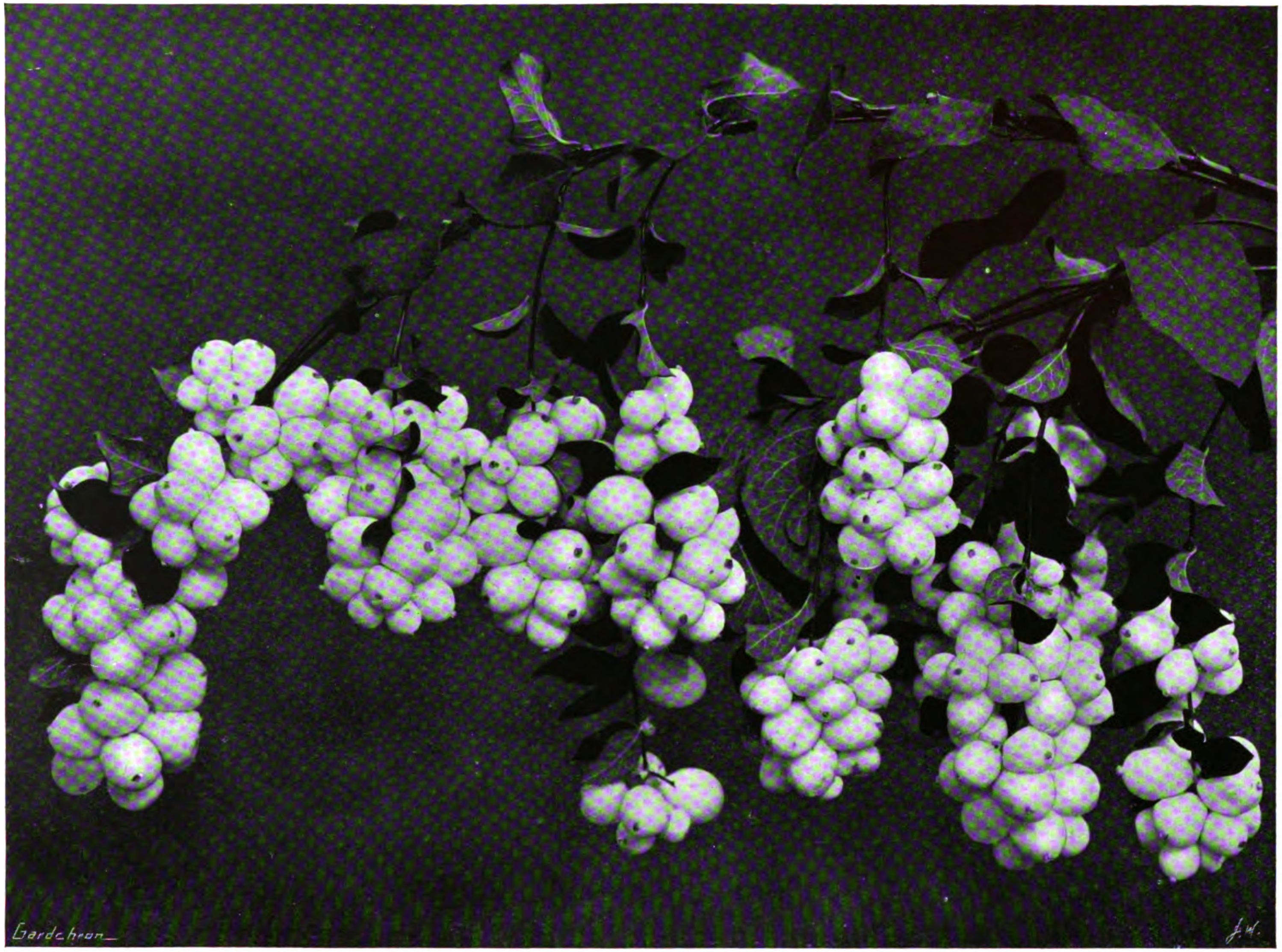
GARDENING APPOINTMENTS.

Mr. E. W. Sampson, previously gardener for three years to Mrs. MELVILLE, Stratton House, Cirencester, Gloucestershire, as gardener to Col. D. MACLEAY, Easington House, Cirencester, Gloucestershire. (Thanks for 2s. 6d. for R.G.O.F. Box.—EDS.).

Mr. H. J. Salloway, for the past twelve years gardener at Deene Park, Peterborough, Northampton, as gardener to W. E. PAGET, Esq., Nanpantan Hall, Loughborough, Leicestershire.

Mr. Geo. H. Terry, for the past eighteen years gardener to H. W. MULLINS, Esq., Warden House, Deal, Kent, as gardener to W. T. Sanctuary, Esq., at the same place.

Mr. G. W. Tyler, previously for eight years Gardener to Sir CYRIL KENDALL-BUTLER, Bourton House, Shrivenham, Berkshire, as Gardener to Lord ALGERNON PERCY, Guys Cliffe, Warwick. (Thanks for 2s. for R.G.O.F. Box.—EDS.).


Gardchron
J.W.

SYMPHORICARPUS RACEMOSUS var. LAEVIGATUS.

THE
Gardeners' Chronicle
No. 1967—SATURDAY, SEPT. 6, 1924.

CONTENTS.

Alpine garden—
  Late-flowering Helianthemums 163
Alps, a novice in the ... 167
Annuals for greenhouse and conservatory decoration 165
Apple crop, the American 160
Bulb Garden—
  Scarlet, crimson, and red Tulips 164
Dahlia, a short history of the 159
Epipogon epipogium ... 159
Freesias as annuals ... 164
Fruit crops, remarks on the condition of the 169
Fruit garden—
  Plums 170
Garden-craft in the Canticles 166
"Gardeners' Chronicle" seventy-five years ago 161
Glasnevin, notes from 165
Horticulture at the British Empire Exhibition 168
Imperial Botanical Conference 170
Neal Mr. E. 160
Nectarine tree, a transplanted 169
Orchid notes and gleanings—
  Cirrhopetalum miniatum 163
Potatos, prices of ... 160
Societies—
  Bangor Horticultural 174
  General Bulb Growers of Haarlem 173
  Royal Horticultural... 173
  Royal Horticultural of Perthshire ... 173
  Sandy Horticultural 173
  Southport Floral Fête 171
Southport Floral Fête 159
Trees and Shrubs—
  Eucryphia nymansay 161
  Symphoricarpus racemosus var. laevigatus 161
Vegetable Garden—
  The Leek 170
Week's Work, the ... 162

ILLUSTRATIONS.

Cattleya Tagus var. Excelsior 163
Deutzia setchuenensis 165
Eucryphia nymansay 167
Gaultheria pyroloides fruiting spray of 161
Neal, Mr. E., portrait of 160
Nectarine Pineapple a transplanted tree of 169
Southport Floral Fete: Messrs. J. Cypher and Sons' group, 168; Messrs. Sutton and Sons' group ... 171
Viburnum macrocephalum in Glasnevin Botanic Gardens 165

Supplementary Plate.
Symphoricarpus racemosus var. laevigatus.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 57·8.

Actual Temperature:—

Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 3, 10 a.m.: Bar. 30·2.: temp. 67°. Weather, Dull.

Southport Floral Fête.

There are several standards by which the success of horticultural exhibitions may be measured, but the importance given them will vary doubtless according to the point of view favoured by each individual concerned. By its promoters and the residents the great Floral Fête, held with such success at Southport last week, will be judged by its power to attract visitors and its fitness to become an important annual item in the programme of local events. The highest standard of success in this direction cannot be reached once and for all on the occasion of a first-time effort, but so far as the initial show is concerned Southport has no reason to be either dissatisfied or disappointed. Many hundreds, probably many thousands, of people who were attracted to Southport were visitors for the first time, and if a considerable proportion of these decide to visit Southport annually during the exhibition week then the Floral Fête will serve the chief purpose of its promoters. Judged by purely horticultural standards, Southport Floral Fête has nought to fear, for the excellence of the competitive exhibits and trade displays was so high as to make every horticulturist prouder than ever of the skill of British growers, the cleverness of British raisers and, not least, the decorative ability of British exhibitors. The general effect and beauty of a show afford another standard, and on this count Southport, probably because of inexperience, failed to obtain full points. Practically all the exhibits were beautiful, and some of the avenues were very attractive, but the general use of high backgrounds entirely prevented the production of a fine, general effect, such as is common at most continental flower shows and not altogether absent at Chelsea. A different arrangement of the classes whereby the whole central area of the great tent would become a beautiful garden, viewed as a whole, is, we feel sure, not impossible. The exhibitors, as is only to be expected when left to themselves, employed their own standards of judgment in staging. If those in authority do all that lies in their power to provide fully for the needs of exhibitors they are sure of a return in the way of generous co-operation. If exhibitors when they arrive find space and staging already allotted to them, are made to feel that their presence is desirable, and every facility is afforded them, they go away with a desire to return. Exhibitors, being human, do not soon forget the encouragement given by generous prizes and kindly treatment. While fully appreciating a hearty reception and generous awards, the traders always consider the business results of their efforts, and although a first show may not be judged so severely as an established one by this standard, we believe the horticultural trade has no reason to complain of the business done at Southport. For instance, several of the large rock gardens were sold, and abundant orders were received for Dahlias and other florists' flowers. Judges and press men are not slow to complain if full time and opportunities are not allowed for the fulfilment of their duties; so far as could be discovered no difficulties arose in this connection, and if some sets of judges could not complete their tasks by the opening hour, they were pleased, rather than otherwise, because competitors were so keen and numerous. Altogether the Southport Floral Fête, while not obtaining the "highest possible," nevertheless obtained a very high percentage of points on all the standards noticed, while on the score of generous hospitality the Corporation earned the maximum award. The Southport Corporation has, indeed, set itself a very high standard in regard to horticultural shows and one which can be maintained only by earnest and enthusiastic efforts. It is said that a good start is "half the battle," but the "best starter" is not always the "winner."

Instruction in Apple Grading and Packing.—The Ministry of Agriculture and Fisheries desires to give notice to fruit growers that courses of instruction in modern methods of grading and packing Apples will be given at the Apple Packing Station which will shortly be opened at Cottenham, Cambridgeshire. This Station is being established by the Ministry in order to demonstrate the possibilities of the co-operative grading, packing, and marketing of Apples in this country, and will be equipped with up-to-date grading and packing machinery. These courses will commence on September 29 and will terminate on October 18. Each course will be of one week's duration and a fee of £1 per course will be charged to all persons attending. Application for attendance should be made at an early date, and in any case not later than September 20, to the Secretary, Ministry of Agriculture and Fisheries, Whitehall Place, S.W. 1.

Hay Fever.—As an antidote to hay fever an American doctor recommends inoculation with an extract prepared from the particular kind of pollen found to cause the complaint, which sets up irritation to the nasal organs, resulting in sneezing, reddening of the eyes, and other well-known symptoms. In this country the most common cause of hay fever is the grass Anthoxanthum odoratum when in flower, but pollen from other grasses and weeds may be responsible. Many gardeners and country dwellers generally are victims to this distressing irritation, and whilst some persons appear to be immune to hay fever, others contract the complaint every summer; to those who are victims a cure would be more than a blessing.

Centenary of the Dahlem Horticultural College.—The centenary of the Horticultural College at Dahlem, near Berlin, was celebrated on the 15th and 16th of August. The proceedings opened by a speech in the garden of the College—unfortunately in rainy weather—by the Director, Professor Echtermeyer. From now on the college is to be known as the the "Horticultural Instruction and Research Institute"; it is under the aegis of the Prussian Ministry of Agriculture.

Award of Garden Merit.—*The Journal of the Royal Horticultural Society*, Vol. XLIX, Part 2, records the bestowal of the Award of Garden Merit to six well-known plants, viz.: Iris unguicularis, Galanthus Elwesii, Crocus Imperati, C. Sieberi, Cornus Mas and Erica carnea. The number of plants so far honoured with this Award is twenty-eight and the recommendations are made by the Wisley Garden Committee. Four Crocuses have won this blue riband and a Hyacinth and Tulip have been admitted to the elect, but so far the Daffodils have been slighted. But perhaps the visits of the Committee have not coincided with Daffodil time, and they are probably on holiday when the Roses are out, for we look in vain for any of the species or varieties of Rose. However, the day of these flowers may come and also that of many other beautiful plants that bloom in May, June, August, September, October and December.

The Tyntesfield Orchid Collection.—It is announced that the famous collection of Orchids formed by the late Mr. Fred. Hardy, at Tyntesfield, Ashton-on-Mersey, near Manchester, is being distributed by the well-known firm of Orchidists, Messrs. A. J. Keeling and Sons, Westgate Hill, near Bradford, who have prepared an excellent catalogue of the plants, which will be forwarded by them on application. Both the late Mr. Fred. Hardy and his father, the late Mr. George Hardy, who showed the first Cattleya Hardyana (First-Class Certificate, August 11, 1885), were equally interested in Orchids and keen judges of good quality. Many unique plants of species and hybrids will now be available, and also examples of the rare old species and varieties for which the collection has been noted.

Epipogon epipogium.—Mr. G. Claridge Druce writes to inform us that the identifier of this plant referred to in his article on page 114 was Mr. Marcham and not Mr. Knowles.

A Short History of the Dahlia.—In conjunction with the displays of Dahlias which at the present time are providing a very picturesque effect in Hyde Park and St. James' Park, the following brief outline of the history of the Dahlia has been prepared, framed copies of which are exhibited near the Dahlia borders:—"The Dahlia is a native of Mexico. It was first introduced into Europe in 1789 and was sent by Vincente Cervantes of the Botanic Gardens, Mexico, to the Royal Gardens, Madrid, then under the care of the Abbe Cavanilles. In his 'Icones,' Cavanilles figured and described the new plant of which three varieties had then flowered. He named it Dahlia in honour of Andreas Dahl, an eminent Swedish botanist. These three Dahlias called D. pinnata, D. rosea and D. coccinea were the parents of all the garden and show varieties until the introduction of the cactus-flowered and more modern groups. The Dahlias described by Cavanilles were introduced into this country in 1798. They were sent to Kew Gardens from Madrid, through the agency of the Marchioness of Bute. They were large, single varieties mostly consisting of eight flat radial florets. They were soon lost and the uninterrupted cultivation of the Dahlia in this country dates from 1804, when a parcel of seeds was sent home from Spain by Lady Holland. Meantime, Dahlias had been introduced into France. They were grown in the Jardin des Plantes, Paris, by André Thouin and figured and described by him in the Annales du Museum in 1804. Only a few years prior to that M. Otto of the Royal Garden in Berlin had obtained Dahlias from Spain. The great botanist Willdenow called them Georginas after Georgi an eminent Russian traveller and botanist. Under this name they were known for a time, both by French and English botanists, but the priority of Dahlia having been established, the French and English reverted to that name. Georgina, however, still remains as the name of the flower in Germany today. The great ambition of the early growers, was to get these old, long-petalled single varieties to double. Little by little this was accomplished and they became big and globular in form. The double show and fancy varieties were popular for many years as exhibition flowers. Dahlia societies and shows were held all over the kingdom and for about forty years they had a run of unqualified success. In 1829 an anemone-flowered variety was figured in Sweet's Florist's Guide but the new departure was not very highly thought of. In 1850 the present race of Pompom varieties was raised in Germany, and, as soon as they became generally known, were much admired for garden and exhibition purposes. In 1872 Dahlia Juarezi was introduced into Holland from Mexico. This variety was the progenitor of the present day numerous race of Cactus Dahlias. About 1880 singles became popular, numerous varieties being raised. Thirty years ago, or more, single cactus, dwarf single varieties and Tom Thumb bedders were raised. One of the most original and effective sections, the Collarette Dahlia, was first raised in France in 1899. Of late years there have been many developments and new departures, so that we have now the paeony-flowered, the decorative, the star and other sections most of which are represented in the present collection, as well as the following species from Mexico, viz.:—D. coccinea, D. variabilis, D. Merckii, D. Jaurezi, D. Imperialis, D. grandis, and D. Cervantesii." We understand from Mr. T. Hay, Superintendent of the Royal Parks, that visitors have shown keen interest in this historical account and that typed copies will be sent to any Park Superintendent, who may be interested, and will apply to him at Hyde Park. Mr. C. Hay also informs us that he has received courteous assistance from Kew and from Mr. C. Harman Payne in the preparation of this "short history."

Prices of Potatos.—The prices for Potatos at the chief London markets have fallen considerably in some cases and on the whole Potatos are cheaper than last year at this date. Epicures averaged £6 6s. per ton compared with £6 10s. in the previous week, while King Edward has realised £8 3s. per ton or 30s. less than in the corresponding week last year. Fewer Potatos were imported at the end of August than last year, a difference of practically 2,000 tons, the figures being 3,596 in 1923 and 5,575 tons in the corresponding week of last year. Of these 1,761 tons were received from Holland and 1,659 tons from France.

Mr. E. Neal.—Mr. E. Neal, gardener to J. A. Nix, Esq., Tilgate, Crawley, who was successful in winning a Gold Medal for an exhibit of choice indoor fruits at the last meeting of the Royal Horticultural Society, commenced his gardening career in 1880 under Mr. Clark, who was then superintending the management of several gardens in the district of Petersfield, Hampshire. He left the service of Mr. Clark to gain further experience in the gardens of Mr. J. Bonham Carter, Adhurst, St. Mary's, Petersfield, where Mr. G. Nottage was gardener and from there he went to Messrs. Bailey and Son's nursery at Petersfield. After a short time at Petersfield he returned to Adhurst as outside journeyman and after a time he entered the glasshouses to widen his knowledge of gardening and especially of the cultivation of plants, flowers and fruits indoors. In 1886 he obtained an appointment at Norbury Park, near Dorking, Surrey, under Mr. Downing, and after passing through the different departments of those gardens, he was recommended by Mr. Downing to lay out the gardens at Shackelford House, Godalming, for Mr. Eccles. This was a new place and Mr. Neal had only been there a year when Mr. Eccles died, but he remained with one or two subsequent owners and during the time he was there he gained twenty-three first and twenty-two second prizes for Chrysanthemums and Primulas at the Godalming Chrysanthemum Shows. In 1896 he was recommended to take charge of the gardens at Tilgate, where he is still engaged. During the twenty-eight years he has been there extensive alterations have been made in the gardens, including the forming of new carriage drives, pleasure grounds, the planting of a pinetum, extending the shrubberies, improving the kitchen garden, etc. His skill in cultivating both indoor and out-door fruits is well-known to many of our readers, for he is a frequent exhibitor at the R.H.S. meetings and amongst the awards he has received are the R.H.S. gold medal, silver-gilt Knightian medals, silver-gilt Hogg medals, the Lawrence Memorial Medal, the Veitch Memorial Medal and the Gordon-Lennox Challenge Cup. In 1900 and again in 1902 he won the first prize at the Brighton flower show for a collection of fruits in very keen competition, and he has also won many other prizes at that show, including silver-gilt and gold medals. At the festival of Empire in 1911 held at the Crystal Palace he won a gold medal and he also won the large Gold medal of the National Chrysanthemum Society at the Crystal Palace in 1912. It will thus be seen that Mr. Neal is a most successful cultivator not only of fruits, but also of flowers. He is a member of the Fruit and Vegetable Committee of the Royal Horticultural Society and rarely misses a meeting. Of burly frame, yet with a modest, retiring disposition, and kindly, smiling face that reveals his jovial personality, Mr. Neal is highly esteemed both by his employer and all who have the pleasure of knowing him.

MR. E. NEAL.

Hardiness in Apples.—It has been found by experience in Canada that the McIntosh Apple is one of the hardiest of all the varieties grown in the Dominion, parts of which are so cold that there are no Apples hardy enough to withstand the climate. In the severe winter of 1903-4 it was found that the McIntosh Apple tree was especially hardy and Canadian fruit growers were urged to plant this variety in the colder sections of Canada. The McIntosh Apple is of very handsome appearance, has a tender flesh and fine flavour and is in season in Canada in late October to February or later. In order to obtain varieties with the same hardy character of McIntosh but with different seasons, numerous seedlings of the McIntosh Apple have been raised and tested, and in a publication issued by the Central Experimental Farms, Ottawa, descriptions are given of six new seedlings of the McIntosh type which have been thoroughly tested, the fruits from these extending the season from August to February. The names are Melba, Joyce, Pedro, Lobo, Hume and Patricia. It is stated that Patricia is considered the best dessert Apple of all these McIntosh seedlings, but not quite large enough for a commercial variety, for it crops in rope-like masses, so that to obtain large fruits the clusters would require to be thinned severely. The character of the flesh of this Apple is stated to be superior to that of any of the others and the quality is also very good. The skin is deep red in colour and the variety is in season from October to December. Several crosses with Northern Spy have also been made to obtain hardy, late-keeping Apples of good quality, and the best of these are also described by Mr. W. T. Macoun, Dominion horticulturist. It would be interesting to know how these hardy varieties would succeed in the colder parts of this country, although it is found, as a rule, that American-raised Apples do not exhibit the qualities here that they do in their own country, and the same is true of many English varieties when grown in America.

The American Apple Crop.—Both the Canadian and United States Apple crops are smaller this year than last. In the important fruit-growing district of Nova Scotia dry weather during July caused many of the fruits to fall and the forecast of the crop has been reduced to about twenty-five per cent. as compared with a month earlier. Many of the fruits have also fallen from the same cause in the Ontario district, whilst in Eastern Ontario Apple scab has developed somewhat seriously and the quality of much of the fruit has been impaired. In the three chief Apple-producing provinces of Canada the total production this year is expected to be from twenty to thirty-five per cent. lower than last year. The total estimated production is approximately 3,185,000 barrels compared with 4,315,000 barrels in 1923. In the United States the Apple crop is expected to be about six per cent. less than last year.

Appointments for the Ensuing Week.—Monday, September 8: United Horticultural Benefit and Provident Society's meeting; National Chrysanthemum Society's Floral Committee meets; Bath Gardeners' Society's meeting. Tuesday, September 9: Royal Horticultural Society's Committees meet; Jersey Gardeners' Society's meeting. Wednesday, September 10: National Dahlia Society's show; Royal Caledonian Horticultural Society's show (2 days); Hove Horticultural and Allotment Society's show (2 days); East Anglian Horticultural Society's meeting; Sheffield Chrysanthemum Society's meeting; Bothwell Flower show. Thursday, September 11: National Rose Society's autumn show at Regents Park (2 days). Friday, September 12: Royal Horticultural Society of Ireland Council meeting; Bannockburn Flower show. Saturday, September 13: Avonbridge Flower show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Libocedrus tetragona.*—Libocedrus tetragona (also called Thuja tetragona) is described by Mr. Lobb as a tree of fifty to eighty feet in height, growing as high as the snow line on the Andes of Patagonia. It is a coniferous plant with four-cornered branches, which must be extremely handsome. Another species of Libocedrus, of greater stature (eighty to one hundred feet according to Mr Lobb), has also been raised. These two are said to constitute the famous Alerse of Chili, celebrated for its gigantic size and the excellence of its timber. Specimens of Alerse are spoken of twenty-four and twenty-two feet round at five feet from the ground; others are said to exist "from thirty to forty feet round, and eighty to ninety feet in height to the first branches; above which the heads of these giants are said to rise some forty or fifty feet more." No doubt they are among the finest Conifers in the world. Since they inhabit the same country as the Chilian Araucaria, and advance to the southward even as far as Port Famine, it is not improbable that they may be as hardy as that tree, and if so they will be of very great value. Possibly one of these may be the genuine Alerse and the other the Cypress of Chili, if indeed those trees are as distinct as is supposed by some writers. *Gard. Chron. September* 8, 1849.

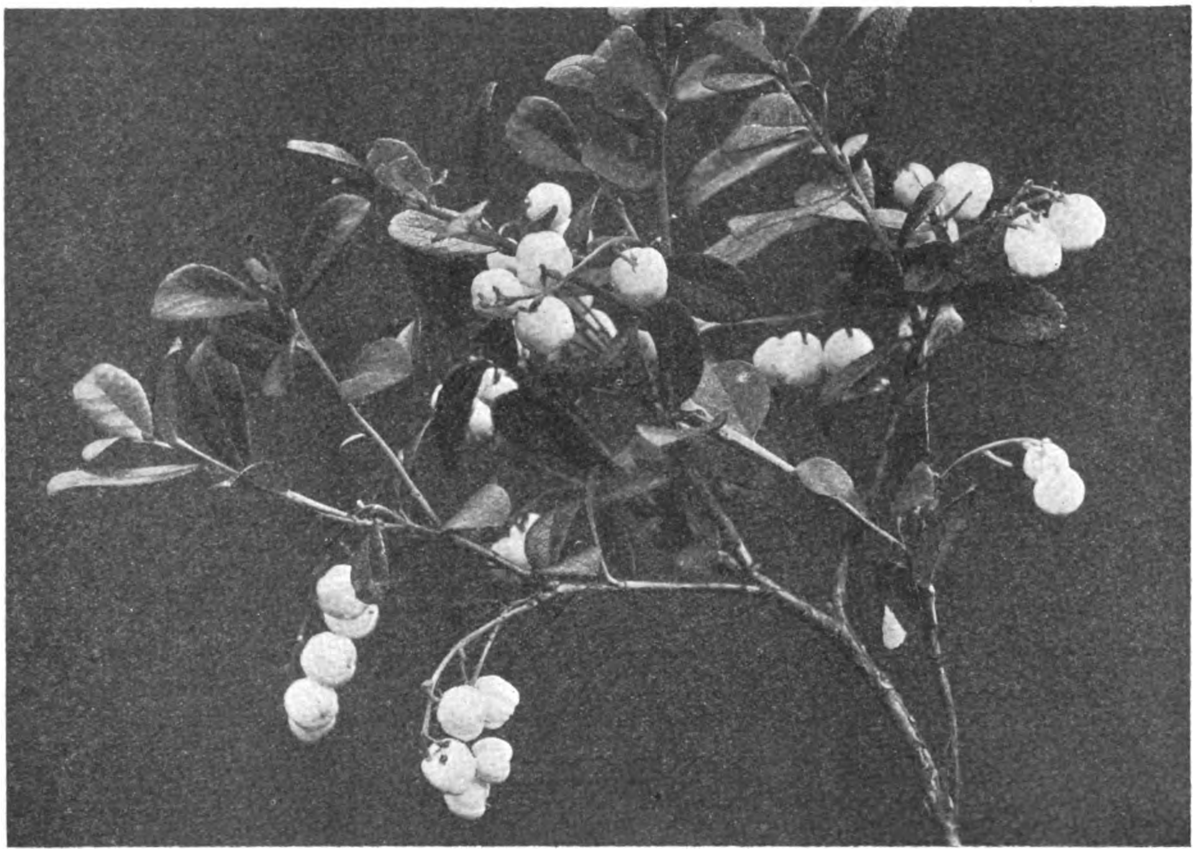


FIG. 58.—FRUITING SPRAY OF GAULTHERIA PYROLOIDES.

R.H.S. Award of Merit, August 26 (see p. 154.)

TREES AND SHRUBS.

SYMPHORICARPUS RACEMOSUS VAR. LAEVIGATUS.

(See Supplementary Plate).

Considerable uncertainty has existed as to the identity of the Symphoricarpus, of which we now give a supplementary illustration. It was sent out from the Coombe Wood Nursery some years previous to the war as S. occidentalis, and was figured in *The Gardeners' Chronicle*, Dec. 23, 1916 (fig. 132), as S. occidentalis macrocarpa. On October 11, 1910, Messrs, J. Veitch and Sons showed it at the Royal Horticultural Society's meeting as S. mollis, under which name it received an Award of Merit. There is no doubt that it has no right to either of these names. The fruits of the true S. occidentalis and the true S. mollis are both only about half the diameter of those shown in the supplementary illustration, and far from being as ornamental. It is simply the old and well-known Snowberry, grown so long in our gardens as Symphoricarpus racemosus, its wealth of berries being due either to good cultivation or to its being a superior form, probably the latter. It must be pointed out, however, that the proper name of the common Snowberry is S. racemosus var. laevigatus. This has its leaves glabrous on both surfaces and rather glaucous beneath, whereas the true S. racemosus of Michaux has them downy and green beneath and it is also of dwarfer habit. To be correct, therefore, the shrub now figured should be called S. racemosus var. laevigatus. The true S. racemosus is probably not in cultivation.

No shrub is better humoured or more easily grown than the Snowberry, but it rarely has justice done to it. It has the habit of producing sucker growths freely, thus forming eventually a dense thicket of stems which in time become crowded and weakly. It is also too often relegated to dark corners where few other things will succeed. Divided occasionally and planted more thinly in a sunny position and in good fresh soil it would have a chance to show itself at its true value.

EUCRYPHIA NYMANSAY.

Eucryphia nymansay (fig. 62) which received an Award of Merit from The Royal Horticultural Society on the 26th ult., is presumably a natural hybrid between E. pinnatifolia and E. cordifolia. About nine years ago seeds were collected from a plant of E. pinnatifolia growing close to a specimen of E. cordifolia, and germinated. The most promising seedlings were grown on in the nursery. Amongst them it was noticed that some were very vigorous and had evergreen foliage intermediate between the two species.

These were planted in a group. They are now 12 feet in height, pyramidal in outline, and well clothed with handsome, variable foliage. Although one of its presumed parents is 27 feet in height its hybrid progeny bid fair to surpass it, for a shoot this season is already 3 feet in length.

The plant's record for hardiness is good. Growth continues, at least with young plants, until late in the season, and matures and finishes with a sound terminal bud, a contrast in this respect to the usual behaviour of E. cordifolia which is generally browned and often killed back.

Eucryphia nymansay is a handsome, evergreen tree and its flowers combine the size of petal and bright coloured stamens of E. pinnatifolia with the longer peduncle, and fluted petals of E. cordifolia. *J. Comber*.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Calanthe.—The deciduous Calanthes are in full growth and have filled their pots with roots. From now onwards until the leaves begin to decay they should be afforded copious supplies of water, and be fed occasionally with weak liquid manure made from cow dung and soot. As the pseudo-bulbs and leaves get more matured the plants should receive increased light and air, in order to consolidate the pseudo-bulbs, but care should be taken to prevent scorching.

Cypripedium. — The cool-growing Cypripediums are in full growth, and should be liberally supplied with water at the roots and syringed overhead on bright days. Plenty of fresh air should be admitted during the day, and on warm nights the top and bottom ventilators may be opened. If the plants are grown in a close atmosphere, the growths will become soft and the flowers weak.

Re-potting Odontoglossums.—In re-potting Odontoglossums it is essential that the pots be well drained to ensure a free passage of water; over-potting should at all times be guarded against. No hard and fast rule can be laid down. Vigorous plants may be afforded larger receptacles than those that have become weakened by over-flowering and other causes; such plants should be turned out of their pots and when thoroughly cleansed, placed in receptacles of as small a size as possible. For a month or two after re-potting it is a critical time with these plants; they should be watered very carefully — a surface sprinkling with a fine rose can will often suffice, and the plants should be placed together in the shadiest part of the house. The stronger plants that have been shifted into larger pots without involving a large amount of root disturbance may be afforded rather larger supplies of water. Others that are still in a dormant condition should not be disturbed by re-potting until the new growths are a few inches high. Specimens which are growing and have sufficient rooting space for another season, may, if the compost is good, remain undisturbed, but some of the old materials may be picked carefully from the surface and fresh substituted to aid the young roots. A good rooting medium for Odontoglossums consists of short pieces of Osmunda fibre and A1 fibre in equal proportions with the addition of chopped Sphagnum moss and crushed crocks; the whole should be well incorporated. Seedling Odontoglossums in their various stages of growth should be potted on as they require it and be kept growing actively at all seasons until they reach the flowering stage. As a rooting compost, an equal proportion of half-decayed Oak leaves may be added to the mixture recommended for the older plants, and the potting should not be done so firmly as in the case of the older specimens.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Bulbs.—The early planting of bulbs, as noted in a previous calendar, cannot be too highly recommended, and the planting of mid-season and late-flowering ones should be carried out as early as possible after this date. Although it is not practicable to plant many of our favourite spring-flowering bulbs until the summer occupants of the beds have been removed, there are many positions where they may be planted, and bulbs for naturalising stand a much better chance of succeeding when planted early. For naturalising by the sides of drives or in the more open glens of the woodland the Daffodil must be given foremost place, and the wide range of varieties suitable for this purpose enables the planter to produce effective displays over a long period. Planting should be carried out in a free and easy manner, spreading the bulbs widely to prevent any appearance of formality in grouping. Amongst other bulbs which should be planted forthwith are Fritillarias, bulbous Irises, Sparaxis, and Erythronium, the Dog's Tooth Violet.

Buddleia variabilis.—This handsome shrub is well worth growing, its late-flowering qualities making it particularly valuable. Veitchiana and magnifica are the best varieties. Owing to the ease with which this plant can be raised from seed there are many inferior stocks existing. Propagation should always be carried out by means of cuttings; half-ripened growths inserted in pots in sandy soil at the present time and stood in a cold frame will root freely.

Violets.—During the present month Violets should be transferred to frames. They flourish in a soil fairly rich in humus and a compost of three parts good fibrous loam to one part leaf-mould, not too decomposed, should be prepared for them. Lift the plants with good balls and plant firmly, leaving the foliage about three inches from the glass on completing the work. Syringe the plants freely during fine weather to prevent attacks of red spider and remove all runners as they appear. The lights will not be required to be placed on the frames for a few weeks.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Amaryllis (Hippeastrum).—Most of these plants have completed their growth, and will in consequence require much less water at the roots. The dying-off process should be carried out gradually, and care must be exercised in the use of the water pot. An intelligent worker should readily discern by the condition of the growth of the different plants when to apply water and when to withhold it. It would be well to separate those plants which have quite finished their growth from those which are still growing, affording them the lightest position in the house where the bulbs may receive the benefit of full sunlight. It is essential that those bulbs which are intended for the earliest flowering next year should be very thoroughly ripened.

The Stove.—With the approach of autumn it is advisable to give the occupants of the stove a thorough overhauling. It sometimes happens, through the necessity of having to grow certain extra plants for summer use, that overcrowding takes place. Now, however, many of these plants, such as Caladiums, Achimenes, and Gloxinias, may be dispensed with for this season, and thus give place to subjects which will be in demand during the winter. Crotons, Dracaenas, Acalyphas and other foliage plants which will need more pot room before the winter, should be potted as soon as possible to enable them to become established in their new pots before the short days are with us. Winter-flowering Begonias, Gesneras, Euphorbias, etc., should receive their final potting without delay, if not already done. A batch of cuttings of Panicum variegatum should be put in now to take the place of plants which have been doing service through the summer. In the busy summer months mealy bug, scale and other insect pests are likely to get a hold on the stove plants. The house and its occupants should be cleared of these insects at the earliest opportunity and help in this direction should be available from the outside staff on wet days. There will be less need to use the sun blind from now onwards. Except on very bright days shading will only be required during the middle of the day and early afternoons.

Lilium candidum.—If this plant is required for growing in pots the bulbs should be obtained and potted without delay. This plant must not be subjected to fire heat at any time, or failure will result. A good medium loam, three parts, to one part of well decomposed hot-bed manure, with a liberal addition of old mortar rubble, will provide a suitable compost. This Lilium likes lime. Not being a surface-rooting species it is not necessary when potting it to leave room for top-dressing as in the case of Liliums of the speciosum type.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

New Plantations.—It is not too soon to determine the site where fresh trees or bushes are to be planted, and to prepare the ground accordingly. An open, sunny part of the garden should be selected, and so soon as existing crops can be cleared off trenching the ground should be commenced in order to allow time for it to settle before planting time arrives. It is a great mistake to plant fruit trees and bushes on shallowly dug ground. By trenching, or digging the soil two spits deep, the trees will obtain a firm roothold, and superfluous moisture will drain away readily if the land is heavy in texture. On the other hand, if the ground is light, deep working will enable the trees to withstand hot, dry weather much better, and thus greatly minimise losses. Do not use too much manure, as this would cause a rank growth; rather incorporate plenty of wood ash and garden refuse with the soil, and in the case of stone fruits, plenty of old mortar rubble, slaked lime and soot. Leave the surface as rough as possible for the time being; later, just before the trees are planted, fork it over.

Black Currants.—The bushes have fruited well this year, and it will be a good plan to relieve them of all superfluous growths, taking care to retain all the young wood possible. Cut out as much of the old shoots as is necessary for sun and air to enter the bush and well ripen the fruiting wood. The bushes will be greatly benefited by a mulching of well-decayed manure, and the autumn rains will wash the nutriment to the roots. All bush fruit plantations should now be hoed to clear them of weeds, which should be taken to the garden fire and burned.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain Brocket Hall, Hertfordshire.

Early Vinery.—Where early Grapes have not given satisfactory results, it may be due to the soil being unsuitable through having become sour and exhausted. If this should be considered the case the present is a most suitable time to overhaul the border. The roots will then have time to recuperate before the vines are started into growth in December. When performing this operation of root-lifting, the work should be commenced at the extreme front of the border, removing the old soil carefully with a four-tined fork, and preserving all the roots possible. The roots should be tied in bundles and kept moist by covering them with damp sacking or some other material that will hold moisture, until the drainage has been put in order and the new compost placed in readiness to receive them.

Compost and Drainage.—The first thing to consider is the drainage, which should consist of bricks stood on edge about two inches apart. These should be systematically placed over the bottom of the excavated trench; next add sufficient broken material of a hard nature to form a good drainage, and on this, in turn, place new turves grass-side downwards. This should form a base for the new compost, which should consist of a mixture of good, rich loam, coarse bone meal, old mortar rubble, charcoal, and a sprinkling of coarse grade vine manure. The compost should be dry enough to allow it to be made firm by treading it evenly in layers. When sufficient soil has been placed in position for accommodating the first layer of roots, the latter should be spread out carefully, removing all faulty and injured roots. Place a little soil over them and make the soil firm. Follow with another layer of roots and soil, and repeat the operation until the border is completed. The planting should be carried out in the shortest time possible and with the greatest care, making every preparation to speed up the work. The vinery should be kept fairly close for a short time and shaded from bright sunshine.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Cardoons.—These plants will now require attention in earthing them up. The lower leaves should be removed, the remaining leaves drawn closely together with thin Raffia of sufficient strength only to hold the leaves together while the earth is placed around them.

Celery.—Continue to earth up the earliest batch of Celery when the soil and plants are dry. Tie the leaves of the plants together with Raffia. Great care should be taken not to allow soil to get into the centre of the plants, and this will necessitate one person holding the leaves together while another places the soil in position. Give the soil a sprinkling of artificial manure before earthing up the plants. Celery of later plantings should receive attention so soon as the plants are ready for the first earthing up.

Spinach.—Rake further sowings of Prickly Spinach as ground becomes vacant. The seedlings should provide sturdy plants suitable for withstanding the winter. Choose well-drained ground in an open situation for this crop. The next sowing should be made at an interval of two weeks.

Potatos. — The plants have ripened very quickly since the heavy rains, and when the haulm begins to turn brown no time should be lost in lifting the tubers, as the ground being so moist, they may make second growth. Select the seed tubers for the following year as the plants are lifted and place a label to each variety. Expose the seed tubers to the sun to cause them to become green as they will then keep much better through the winter.

Brussels Sprouts.—These plants have done well this season. All yellow leaves should be cleared away from the bottom of the plants, using a long stick with a nail on the end to draw them to the side. Any plants inclined to lean over should be made upright and firmed. A dressing of soot should be spread underneath the plants on a mild day. The soot will improve the colour of the plants and prevent slugs from damaging the Sprouts at the lower part of the stem.

Herbs.—Take the opportunity of a fine day to cut Herbs required for use in a dried state during the winter. Before tying the different kinds into bunches, lay them out for a few days thinly to complete their drying.

ALPINE GARDEN.

LATE-FLOWERING HELIANTHEMUMS.

Although the members of the genus Helianthemum are almost entirely spring and early summer bloomers, Helianthemum halimifolium and H. algarvense (ocymoides) may be relied on to flower from the end of July throughout August. For that reason alone they are very valuable as shrubs for the rock garden, and during the above period they are often the sole representatives of the taller Cistaceae in flower. Between the two species there is not much difference to the average eye. Both have a grey-green foliage, silvery when young, and the golden-yellow flowers, which open flat, are of about equal size. But while those of H. algarvense have a rather deeper blotch of chocolate at the base of the petals, the flower panicles are not quite so tall and prolific as in its congener, which latter are also inclined to be the later of the two. With us, H. halimifolium will grow to four feet in the open, thus exceeding the stature of the allied species, which also affects a closer, more upright habit. But we find that both of these Sun Roses are the better for an occasional thinning of the older branches.

H. alyssoides, which is at its best in May and June, will usually produce a liberal second crop of blossom at this season. With this in view we are more careful with the shears when, about mid-summer, the vulgare hybrids get their annual shearing. Only the old flowering tips of alyssoides are removed and, having given the plants a thorough soaking, they are top-dressed with a compost of old cow manure, loam, and broken mortar. The result of this treatment is a fine yield during August and September of those beautiful deep yellow blossoms for which this singularly lovely species is so noteworthy.

Two other species still (mid-August) in full flower are H. apenninum and H. pilosum. The former is a pretty, hairy-leaved shrublet with a quantity of large, pure white flowers. The other, a native of certain parts of this country, presents an equally attractive display in a bright cherry-pink. *N. Wales.*

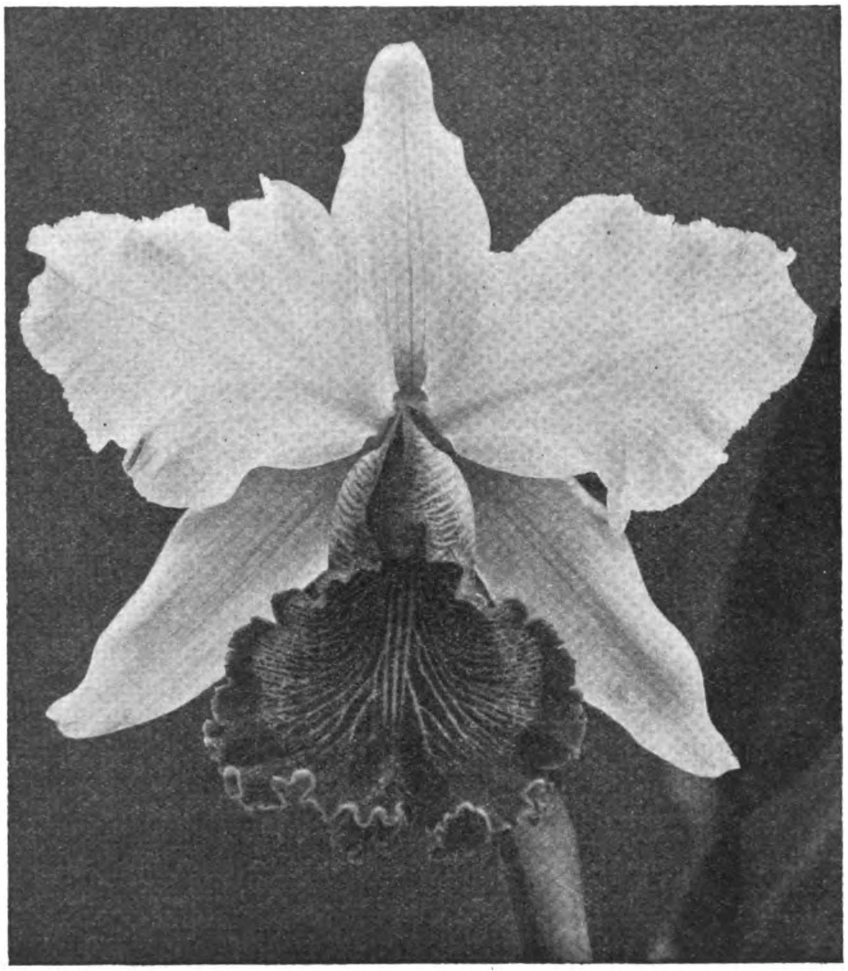


FIG. 59. CATTLEYA TAGUS VAR. EXCELSIOR. ¾ Natural size.

R.H.S. First Class Certificate, August 26 (see p. 154.)

ORCHID NOTES AND GLEANINGS.

CIRRHOPETALUM MINIATUM, ROLFE.

An elegant spray of this rare species is sent by H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), where the numerous Bulbophyllums and Cirrhopetalums have flowered exceptionally well this season. The plant is dwarf, and produces slender spikes bearing one-sided umbels of vermilion-orange flowers, the narrow lower sepals drooping gracefully.

The species has also flowered with Sir Jeremiah Colman, Bt. It was originally introduced from Annam by Messrs. Sanders, and has since been noted from Siam, but very few plants of it have ever been introduced to gardens. Its nearest ally is C. gracillimum.

BULB GARDEN.

SCARLET, CRIMSON AND RED TULIPS.

I am grateful to the Editor for allowing *R. K.* and myself to scratch one another as we are doing. The varieties for my trial of early single white Tulips (page 118) are ordered, but I fear I have neither the heat nor the room to attempt to find out "how soon such and such a variety may be obtained at its best." That would mean "forcing"—real forcing, which would have satisfied dear old Mr. James Walker, whom possibly *R. K.* may remember—whereas, all I can attempt is to bring them along at a temperature only slightly higher than that which suits Freesias.

Now, with regard to the scarlet, crimson and red varieties, I can only suppose my unknown friend calls Prince of Austria an orange and not a red or he would have mentioned it. Still, I remember that the late Mr. William Marshall, who was for years Chairman of the R.H.S. Floral Committee, told me a few years before his death that he did not know it. Personally I would put it at the head af almost all Tulips—early, midseason and late flowering—as a general utility variety. After Prince of Austria I would put Couleur Cardinal as a flower that in itself is extremely beautiful in its rich dress of Plum-flamed, deep-toned crimson. Its walk in life is to beautify beds or borders in the open. The early history of Couleur Cardinal is something akin to that of the popular Rose Lady Pirrie, which was very nearly consigned to the annual Gehenna of the nursery in which it was raised.

My good old friend, Mynheer G. H. van Waveren, who in his boyhood had sailed upon the lake of Haarlem, told me that when he bought the small stock of this then brand-new variety and took the flowers home to his father his reception was very much the reverse of that of the prodigal son! The father's judgment was wrong; the son's was right. "Ah! Mr. Jacob, how I wish we had acres and acres of it now," said the old man. Vermillon Brillant is a capital variety—more especially under glass. In the open it has not the extraordinary dazzle (I can think of no better word) of Scarlet Mammoth. When the sun shone on its great, square-based blooms and opened them to their fullest extent I literally could not look at them. I had a huge bed of it, at least twenty-five yards long by four feet wide. It was the most brilliant flower bed that I have ever seen. I wonder why Scarlet Mammoth is hardly ever seen.

Passing over doubles and coming to Cottage varieties, I do not know Gesneriana Advance, but if it beats the old, well-tried spathulata, when that variety has struggled up from a depth at which it was never knowingly planted, it is a good one. I forget for the moment the name under which Grenadier began life, but I had a few bulbs then from Mr. Walter Ware to try. It was a grand flower, but an incorrigable "breaker"—all that lot are. If only Beau Brummell were an exception! It is the linifolia of the Cottages and one of the best named varieties I know. It is a real "Beau." I never regret Grenadier so long as I have Marksman and Boadicea (true). The first-named has more yellow and the second has more brown in its red. Both are among my special favourites, and, what is more to the point as regards these notes, they find favour in the eyes of my visitors. Once I thought Isis was at the top of the tree in the scarlet Darwins, now I plump for Teddy. It is placed in the same colour group in the R.H.S. Tulip book. It may not be quite so bright a shade but the whole plant is better proportioned. What about Homer if a brighter one is wanted? It does not grow so tall as Teddy, and it is very red. All traces of rose have gone. It is said to be a good forcer, but I have never grown it under glass. As a dark red William Pitt takes a lot of beating. It is not a very quick increaser; hence, as more people are getting to know it the natural result follows and the price goes up, as it did a dozen years back in the case of The Bishop.

Does *R. K.* know Millet? This Tulip I always associate with Mr. Wallace of R. W. Wallace and Co., of Tunbridge Wells. Long before his firm moved away from Colchester he drew my attention to it, and I have never been without it since. As Darwins go it is on the dwarf side, and its flowers are a deep rich carmine. It has one great recommendation; it is very distinct, quite as much in its colour as Zulu is in its shape.

In the last few years I seem to have been drawn more to rose as a colour; as a result Petrus Hondius stands out as one of my great favourites. I forgive the old man himself for rather treading on my toes in his sarcastic remarks about the people who have only grown one kind of flower in their gardens. The States of Holland were sickening for the mania when he wrote his very famous work, *Dapes Inemptoe* (1621), so I can make excuses. The great beauty of the Tulip entirely wipes away any soreness; to me it merits far more than "a treasure for bedding."; I like it better than the expensive Venus. No one, I think, wants both, and so long as Petrus Hondius can be had, and Venus remains at anything like its present price, I would advise everyone to give it a bye. Venus reminds me of George Maw, which is down in my notes as a rich, dull rose, somewhat after the colour of Venus, but duller. I never had it in my garden until last autumn, so as I have only seen it in bloom once I had better just say what Capability Brown used to say when he saw an estate for the first time, "It has great capabilities." Akin in colour to Venus and Petrus Hondius we have Prince of the Netherlands; I say ditto to all *R. K.* writes about it. It is a very fine variety indeed, and now that it has come down in price, it is a Tulip that everyone, who can, ought to buy. *Joseph Jacob.*

FREESIAS AS ANNUALS.

All unconsciously, I think, Mr. W. E. Wright has answered his own question by the heading of his interesting note (p. 103). "Can any reader inform me what will happen next season and what treatment I should give the plants to get them to bloom in the winter of 1925, as I think it very much out of season to have them in bloom at midsummer?" Personally I should not attempt to persuade any plants that have not bloomed this summer to flower in the winter of 1925; I would throw them all away and at once sow more seeds and bring the resulting plants along in the usual way. If Mr. Wright has never sown seeds in August he will be surprised to find what fine bulbs can be turned out of the pots in the following July. I lay an emphasis on "pots" as experience teaches me that seeds sown in six or seven-inch pots (each one an inch from its nearest neighbour) do better than when they are sown more thickly and grown in pans. A small proportion of the plants always flower with me in the spring, that is in seven or eight months from the time of sowing, and I am trying experiments to see if I can get a very much higher percentage to practically behave as annuals when sown in July or August. In Sutton's Bulb List for 1923 there is a picture of a pot of Freesias in full bloom in August (I think) from seeds sown six months previously. Mr. Leonard Sutton informs me that this seed is grown for the firm in New Zealand, and that "the type is very similar to Excelsior." He adds "We hope very soon to have several coloured varieties to flower at the same time as these." Mr. Wright has not waited for these as he has had plants "blooming freely in all colours imaginable" this July from seeds sown on January 16. Might I ask him if his seed was home grown? or if he knows if it was English grown seed?

Curiously enough some time back I made up my mind not to sow all my seeds this year in August but to keep some until January to try if it will be as amenable to this annual sort of treatment as the white variety of which Mr. Sutton sent me seeds and of which I have proved does all that he claims for it.

"Freesias as annuals" will sound strange to some ears, but it seems to be quite within the compass of "practical politics," more so, I think, than "Gladioli as annuals." Perhaps in a year or two it will be as commonplace as "Antirrhinums as annuals." I may very likely see before long some such advertisement as "Sow Freesias in July and January to have them in flower almost all the year round." I groan at the very thought. I am weary of seeing the eternal Carnation week in week out. People however love to have it so, and so long as they do a supply will be forthcoming; for dealers have to cater for what the public wants. If snow in summer is still an impossibility, Roses in winter, is not. It is in no selfish spirit that I quote the opening sentence of Chapter XX of *The Dutch Gardener*, "made English" in 1703. "If the Tulips should be made common the civilest Dealing that is in the World would thereby be taken from Men, and they would be deprived of the sweetest Communication that is among honest Men. How much Acquaintance doth their Rarity not afford to knowing Artists? How many pleasant visits?" It will be said that I am cutting my own throat by using this quotation, as if the flowers were in bloom all the year round these pleasant visits would be all the year round too. A terrible state of things to contemplate! Yet Mr. Wright's suggestion of Freesias in beds in the late summer garden is alluring. A bed of sweetness covers a multitude of sins. For this, much must be forgiven. Freely do I forgive the night-scented Stock (Matthiola bicornis) for having had a sad "night out" look all day long when it exhales perfume the next night. Freely would I eat my words if only I could enjoy the scent of the Freesia in my garden for a few weeks every summer. But the Freesias *must* be scented and their season must not be over long. Has anyone tried planting out Freesias? Will they turn out? Or must the pots with their contents be plunged in the ground? *Joseph Jacob.*

Mr. Wright's experience with Freesias as annuals (p. 103) is very interesting, and I must congratulate him on being so successful. If his plants are still growing now (Aug. 9) it will be very late before they dry off and ripen properly, and if treated in the ordinary way I should think they would not flower until very late next season.

If, on the other hand, he tries to keep them growing, I would suggest a partial drying off to give them a rest and begin growing them on again very gradually without turning them out of the pot. Neither suggestion is satisfactory.

Freesias in flower at midsummer are not wanted, and that is one of my objections to sowing at any time except August. I prefer allowing each seed plenty of room to develop its seedling and to avoid pricking off, which—in spite of Mr. Wright's success—I consider a difficult job; and to avoid giving the seedlings a check. *G. H. Dalrymple.*

NOTES FROM GLASNEVIN.

Deutzia setchuenensis

Deutzia setchuenensis (Fig. 60) is one of the most interesting members of a genus remarkable for the number of beautiful species and hybrids it contains. Introduced apparently in 1897, and distributed by Messrs. Lemoine as D. corymbiflora, it does not seem to be much known beyond botanical collections, probably because it is less hardy than most of its relatives. Although never killed when grown in the general collection here, it was invariably badly cut down every winter and never flowered satisfactorily until moved to a wall where it has done much better, the ends of the shoots alone being still liable to injury.

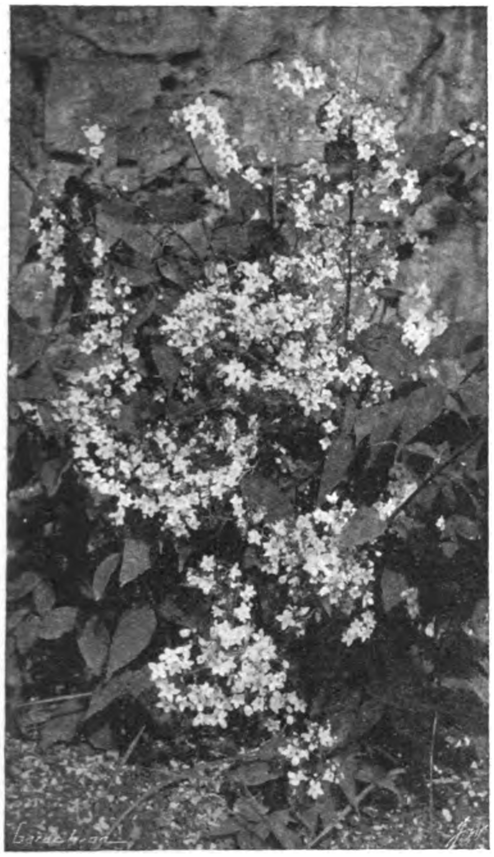


FIG. 60.—DEUTZIA SETCHUENENSIS IN GLASNEVIN BOTANIC GARDENS.

The leaves are up to four inches long, tapering to a long point, minutely toothed and furnished with starry hairs on both surfaces, somewhat more densely below. The bark on the older parts of the shoots is brown and peels off in flakes. The pure white flowers are three-quarters-of-an-inch wide, produced in branched corymbs. For localities where severe frosts are not frequent D. setchuenensis can be highly recommended, and lovers of good shrubs in colder districts might well try it against a sunny wall. The flowers appear here generally in July but this year the plants were somewhat later in blooming.

Viburnum macrocephalum.

Unfortunately, Viburnum macrocephalum (Fig. 61), too, is a somewhat tender shrub for general planting, but is so fine when in flower as to be worth some trouble in selecting a position. Tenderness in many cases is entirely due to lack of sufficient sun to ripen the wood, but success can often be achieved by selecting the sunniest site available, and by providing soil well drained but not too rich. For many years a specimen has grown here planted in a narrow border in front of one of the conservatories and is now eight feet high. The young shoots are grey with minute starry hairs which disappear the second year. The leaves are oval, from two to four inches long, the larger ones being about two-and-a-half inches wide; the margins are finely toothed, and the upper surface is dark green, furnished with scattered hairs. The under surface is paler and more densely clothed with down.

The flowers are pure white, all sterile, produced in large trusses from four to five inches across, and although perhaps somewhat clumsy, a well-flowered specimen is certainly a striking object. Introduced by Fortune in 1844 from China, there is a figure in the *Botanical Register*, 1847, t. 43, prepared, perhaps, from an indoor specimen, hence the apparently enormous size of the truss; the toothing of the leaves is also more prominent than in the specimen before me.

Sedum yunnanense valerianoides.

Dr. Praeger in his monograph of this genus (*R.H.S. Journ.*, Vol. XLVI) remarks: "The plant has no horticultural value, the flowers being very small and green." In this he is right so far as the actual flowering period is concerned, but, at the present time, there are few more interesting or beautiful plants in the rock garden. A year or two ago two young, unflowered specimens were planted in ordinary loamy soil and have grown well; they are now eighteen inches high, each plant having several stems. This spring they flowered freely, one plant proving male and the other female. When in flower they were not remarkable.

The inflorescence of the male plant is a large thyrse composed of innumerable, small, four-partite flowers with obsolete carpels; the sepals, petals, and filaments, however, remain persistent, and at this season assume a reddish hue. The female inflorescence is also thyrsoid but more compact, the diverging carpels being now as bright as the flower stalks of the Venetian Sumach; in fact, the effect of the group at present is, at some distance, almost exactly like that of a miniature Rhus Cotinus when well coloured. *J. W. Besant.*

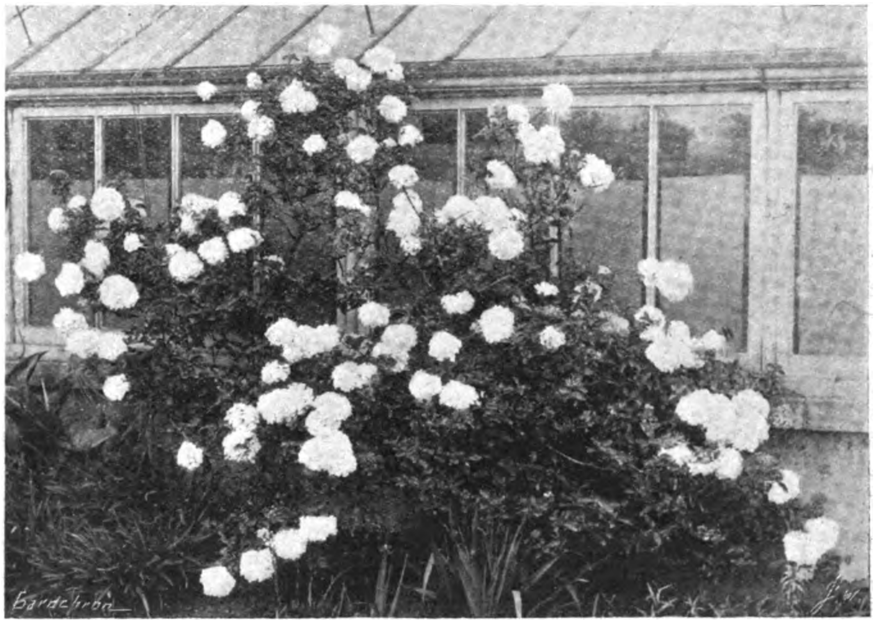


FIG. 61.—VIBURNUM MACROCEPHALUM IN GLASNEVIN BOTANIC GARDENS.

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

HEBENSTRETIA COMOSA.

This uncommon-looking, half-hardy annual, with its long spikes of Mignonette-like sweetly-scented flowers, is worth growing in the greenhouse. The seeds may be sown during February or early March. Hebenstretia needs the usual cool treatment afforded this class of plants, pricking off and potting on the seedlings as they require it. Good specimens may be flowered in 48-sized pots, and this plant grows quite well in any good potting compost.

HELIOTROPIUM PERUVIANUM.

There are many beautiful varieties of this plant, which is a perennial of a more or less shrubby character; but for our purpose we may regard it as an annual and treat it as such. If seeds are sown indoors in gentle warmth during February, the resulting plants may be used for summer bedding, or for our purpose grown on in pots for furnishing the conservatory and greenhouse during late summer and autumn.

There are many varieties which may be raised from seed, the colours varying from white, through varying shades of violet and purple, to pink and rose; there is also a giant strain which attains a height of eighteen inches to two feet, which, when well grown, is very useful for pot cultivation. To attain success with Heliotrope in small pots, high cultivation and generous feeding are essential.

The seeds may be sown in a temperature of 50° to 55° any time from the end of January to about the middle of March. The seedlings should be pricked off in the usual way into boxes of rich compost, and when large enough potted on as they require it, using a rich compost and potting them fairly firmly. When they have well filled their pots with roots, they require ample supplies of water and should be liberally fed with liquid manure alternated with guano or other soluble fertiliser. The dwarfer-growing varieties may be cultivated in six-inch pots, while those of the giant strain will require seven-inch or eight-inch pots for if they have been pinched several times they will make large specimens. *J. Coutts.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

GARDEN-CRAFT IN THE CANTICLES.—V.

THE culture of the Fig was well-known to the writer of *The Song of Songs*, and, though there is only one allusion to the subject, that one reference is so poetic and expressive that it seems to imply all that was known on the matter. It forms part of what may be termed the Ode to Spring (Canticles II. 11 seq.) :—

> "For, lo, the winter is past,
> The rain is over and gone;
> The flowers appear on the earth;
> The time of singing (or pruning) is come,
> The voice of the turtle is heard in our land;
> The Fig-tree ripeneth her green figs,
> And the vines are in blossom,
> They give forth their fragrance."

Very worthy of careful study is the Fig, whether on account of its native peculiarities, its uses, its methods of fertilization, its diseases, or any other reason. The Chinese, struck by its peculiarities, name it Mo-Fa-Kwo, or the No-Flower-Fruit, a designation which is as naive as it is apparently correct. In a land which is known as the Flowery Kingdom, a blossom so inconspicuous as that of the Fig would be passed unheeded. The fruits appear to spring direct from the wood, and are destitute of gaudy petals such as the Apricot or Apple send out to herald the coming of their fruits.

A quaint writer remarks that "the Fig tree and its fruits are well-known; they were very common in Palestine, and there is mention made of them often in Scripture. Our first parents covered their nakedness with Fig leaves (Genesis III. 7) gathered either from common Fig trees, or from some of another kind, the leaves whereof are much larger." There we are in the realm of legend and folk-lore, but a minute study of the words used in the Hebrew writings shows us that the Fig was well known, carefully cultivated, highly prized, and put to many and varied uses. Very poetic is the expression which we find in the Canticles. The verb "to ripen" is the same as is elsewhere translated "to embalm," and thus the Fig tree is said to embalm her fruits. That, surely, suggests a poetic mind, and an ability to use similes gracefully and successfully. There is something very diverting about the notions held by writers on these subjects in pre-scientific days. When as yet philology was inexact, botany was without system, and learning was undisciplined, the most romantic ideas prevailed. One old writer, discoursing on the Hebrew word for the Fig tree (*teenah*) says it comes from the root *En*, and signifies "the grief-tree, from the roughness or prickliness of the upper side of its leaf; a kind of natural sackcloth, which, after the fall, our first parents girded over the obnoxious parts to express their contrition. Whence sackcloth about the loins, penitential girdles, and the like [as hair shirts] descended to their posterity. Irenaeus long ago remarked that Adam by the act of girding himself with Fig leaves testified his repentance, when there were many other kinds of leaves which might have been less disagreeable to his body," and so on. In these days it is impossible to make such use of the imagination, at least, when dealing with garden-craft and plant-lore. It is more probable that the Fig was named *teenah* because the leaves were broad (tan, taan, tanan, to expand or spread out), but whether or not this root is in any way connected with a similar one found in such words as "extend" or "tendril" is open to dispute. Lagarde, however, gives yet another explanation of the word *teenah*. According to him the original idea was that of nearness, the Fig tree being that near which another is planted, or to which another is joined. This is a point, however, which must be considered later.

In the passage from Canticles we read that the Fig tree embalms her green Figs, and here quite a different word from *teenah* is used. In the singular it is *pag*, a co-incidence which has tempted some writers to identify it with our word Fig and the Latin ficus. Another word, *bikkurah* or *bakkurah*, which occurs more than once in the Old Testament, denotes the early ripe Fig, still as of old, highly esteemed both on account of its forwardness and its fine flavour. When the green Figs (*paggim*) were ripened or embalmed they became *bikkuroth*. By the Moors, this early Fig is called *boccóre* or *beccóre*, while with the Spanish it is *albacora*. The word comes from the root *bakar*, to burst open, ripen, or be early, whence comes the Hebrew word for first fruits. Dr. Shaw informs us in his book of Travels that the *boccóre* or early Figs ripen in Barbary in June, and drop as soon as they are ripe. Hence the beautiful allusion of the prophet that "they fall into the mouth of the eater on being shaken." It not infrequently happens, however, if the season is favourable, that some of the more vigorous and forward trees will yield ripe fruit six weeks or more before the usual time, or about the beginning of May.

The Fig, properly so called, also bears the name of *Kermez*, sometimes spelt *karmous* or *kermouse*. "No sooner doth the *boccore* draw near to perfection, in the middle or latter end of June, than the *Kermez* or summer Fig begins to be formed, though it rarely ripens before August; about which time the same tree frequently throws out a third crop, or the winter Fig as we may call it."

But so much remains to be said that we must now turn to another branch of our subject and study the gardeners' method of bringing about fertilisation. When Lagarde affirmed that the Hebrew word for Fig tree meant "that to which another is joined," he had in mind the old-time practice of planting wild Fig trees by the side of cultivated ones, or the process described by Aristotle, Pliny, and others, by which fertilisation was secured through placing branches of the wild Fig on the cultivated trees when in bloom. My opinion is that the Fig tree already had its name before this advance had been made in the art of culture. Figs must have ripened and been used ages before caprification by artificial means was introduced, and that being so, Lagarde's explanation becomes improbable. Moreover, Figs were not the only trees treated in this way. As is well-known, the wild Fig tree does not of itself bear an edible fruit. It is of value, however, because it harbours tiny insects which migrate to the cultivated trees. These both bring about fertilisation, and by their irritation help to hasten maturity. It is pleasing to find it stated in the *Encyclopaedia Biblica* that these points are elaborately dicussed in the *Gardeners Chronicle* for July 7, 1883 (p. 22 f.) by W. B. Hemsley, F.R.S. Caprification, however, is not absolutely necessary.

The cultivation of the Fig in Palestine dates from very early times. As with the Vine so with the Fig—it is frequently grown on terraced hill-sides, either by itself, or more frequently along with other trees. Allusion to this fact is made in one of the Parables. A Fig tree planted in a vineyard indicates the highest care and the most devoted attention. In the Canticles the Vine and the Fig tree are mentioned together, as though they were regarded with equal delight. But that they were long ago the occasion of much concern on account of the diseases from which they suffered is clear from the instructive reference made to them by Jeremiah (XXIV. 1 *seq*). He saw two baskets of Figs; "one basket had very good Figs, like the Figs that are first ripe (*bikkuroth*), and the other basket had very bad Figs, which could not be eaten, they were so bad." It is curious to note how entirely this subject has been overlooked by almost all the well-known writers on the natural history of the Bible, and the expositors. I find no reference to the diseases of Figs in Tristram, de Candolle, Grindon, or any of the Encyclopaedias, Bible dictionaries or Commentaries. Travellers like Robinson, Stanley, Thomson and Shaw are equally reticent on the subject. Yet it is, among students of the diseases of fruits and plants, a well-known fact that a black smut or fungus (Ustilago ficuum, Richdt.) is frequently met with not only in the cheaper kinds of Figs, as Plowright states, known to the trade as natural Figs, but even among the choicest kinds. We know that these diseases are not merely modern developments. The Bible makes frequent reference to such pests of fruit, flower and grain, and it is therefore instructive to find the Prophet alluding to diseased Figs which could not be eaten because they were so bad. A closely allied species of Ustilago (U. phoenicis, Corda) is found frequently associated with the Dates which come to us from the East, and recent research has revealed the presence of many other forms of disease among fruits which have long been causing trouble, though the nature of the scourge was not always understood.

The Fig, whether wild or cultivated, has always been regarded with delight in Palestine on account of its genial and refreshing shade. Nathaniel sits under the shadow of his Fig tree, and as a type of the contemplative Jew shows us what was meant by each man sitting under his own Vine and his own Fig tree. The Fig, moreover, was cultivated, not alone for its shade and its edible fruit, but for its medicinal properties. If a syrup of Figs was not extracted in the days of the prophets, plasters at least were manufactured from the fruit. But our subject is inexhaustible, and the reader must now be left to follow it up as his inclination directs.
Hilderic Friend.

A NOVICE IN THE ALPS.

III.—THE RHONE GLACIER AND FURKA.

These sundry observations on the alpine flora may perhaps be a sub-conscious expression of the pride which a novice feels when he discovers that he can recognise a few of the flowers he finds, and it was probably self-evident that these notes could only have been written by a novice. Certainly the knowledgable in alpine floristic lore will have no doubt but that what is here set down could only proceed from an ingenuous pen, and if they have pleasure in the perusal, it will come rather from the awakening of pleasant memories of alpine travel than from additions to their already well equipped stores of knowledge.

The Susten pass ends at Meiringen, but the traveller eager for the heights turns at Innertkirchen into the Grinsel and takes the uphill road, which leads over the pass. On every rock face he finds Saxifrages—beautiful, gracious, little stars of blossom, but among them none which he need covet for his own alpine garden. This traveller at all events found rain and mist from which he had fled in England, and so unheroically the rücksack and the alpenstock were stowed away comfortably with him in the motor-diligence, and his journey over the Grinsel was a botanical blank. Not even the mountain peaks which guard the top of the pass were visible, and the journey through those wild alps was no more inspiring than one in the London tubes.

At Gletsch, near the foot of the Rhone glacier, the weather cleared and plant exploring became possible again. Up the steep hillside, down which the road zigzags from the Grinsel pass to Gletsch, the Aconite-leaved Ranunculus makes a lovely show. At lower levels it is a by no means noteworthy plant, but on the higher ground its large, white blossoms, borne on long, sinuous, leafy sprays, convert it into one of the most decorative of flowers. A bowl filled with its long inflorescences, each with twenty or more open flowers, lit up the traveller's room and delighted his eye throughout a three days' sojourn in this delightful spot. Brought to England, Ranunculus aconitifolius would doubtless go the way of so many fine alpines and, pining for the rarer air, lose its quality and charm. However, it seeds fairly freely and hence might with a little trouble be grown annually from native seed.

On the Grinsel slopes—indeed everywhere in this region—Androsace lactea is common and trimly beautiful. But the dominant plant of the way up the Furka to the Rhone glacier—ranging for some six thousand feet to above eight thousand feet—is the purple Viola calcarata. It occurs in every shade of colour from the darkest purple to the palest mauve and maintains in these higher levels, the blueness which the lower alps receive from the Phyteumas and Campanulus. With the Viola, and like it, getting of purer and purer colour as the height of the Furka pass is approached, is dwarf Myosotis, and presently the symphony of blue is made perfect by the Gentians, of which at least three species are met with before the ragged ice cliff of the Rhone glacier is reached. Beside Gentiana acaulis and another, G. nivalis, with smaller flowers of exquisite deep blue, is there. The most striking colour effect met with in the climb up the Furka at between seven thousand and eight thousand feet, however, is produced by no less a plant than Caltha palustris which makes sheets of gold wherever the ground is swampy. It certainly had not occurred to me that this familiar plant of swampy English meadows may take rank as a high alpine. Where limestone obtrudes itself among the prevailing granite rocks the alpine Soldanella, S. alpina (or vulgaris), appears with unfailing regularity, so that within a few yards both it and S. pusilla are to be encountered; the latter more bell shaped with less frilling to the edge of the bell; the former looking like a miniature Robinson Crusoe but with a more spreading and more fringed edge. Of other plants there are the gracious white-flowered Ranunculus pyrenaeus with grass-like leaves; Polygonum viviparum; Gagea minima, with little, yellow, starry flowers; Gentiana thyrsoides, a great swelled head of dingy-white flowers, no more beautiful than the yellow-flowered Gentians, G. lutea and G punctata, which latter occurs at the lower levels; and a Doronicum with handsome orange flowers which appears to be D. Clusii.

Of occasional occurrence on the Furka, but in vast quantity on the hills around Andermatt, is to be found the tall-flowered, white, sweet-scented Lily-like Paradisia Liliastrum. The hills above Andermatt are now (in July) white and scented with this charming plant. In its company are Orchids of many species, and here and there a crimson blotch of Dianthus Armeria and just one early flower of Aster Amellus with its lovely blue flower-head. They tell me that the hills around this open, upland plain are rich in rarer alpines. It may be so, but the mist and rain have descended upon us once more and the floristic secrets of these mist-enshrouded hills must be left to the luckier to explore.

The rain has moreover brought on added trouble, namely, that it has beguiled me to endeavour to name my Saxifrages by the aid of Swiss flora written in an unknown tongue; of this I am sure that the task will last longer than the rain, and that the knowledge I shall gain of the genus is likely to be as misty as the prospect which greets me from the window as I lift up my eyes toward the mist-hidden hills. *A N.*

(*To be continued*).

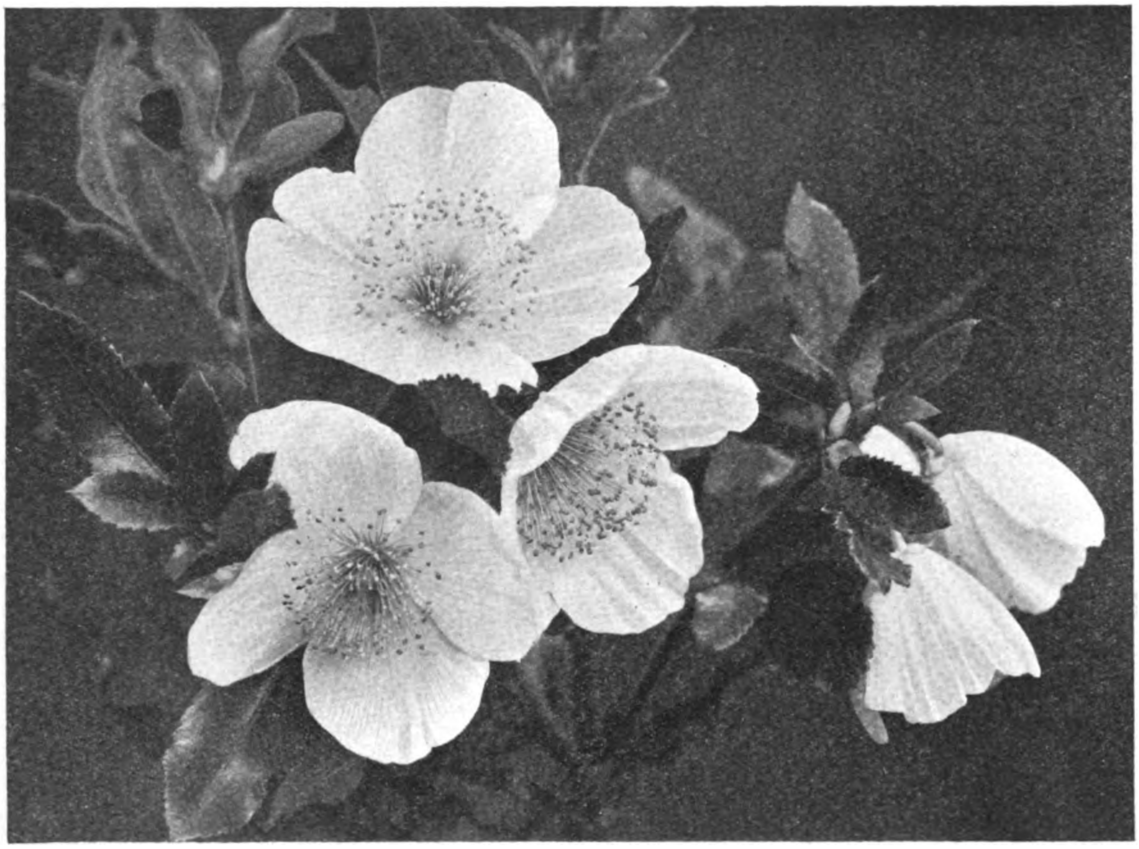


FIG. 62.—EUCRYPHIA NYMANSAY (E. PINNATIFOLIA × E. CORDIFOLIA)

R.H.S. Award of Merit, August 26 (see p. 161.)

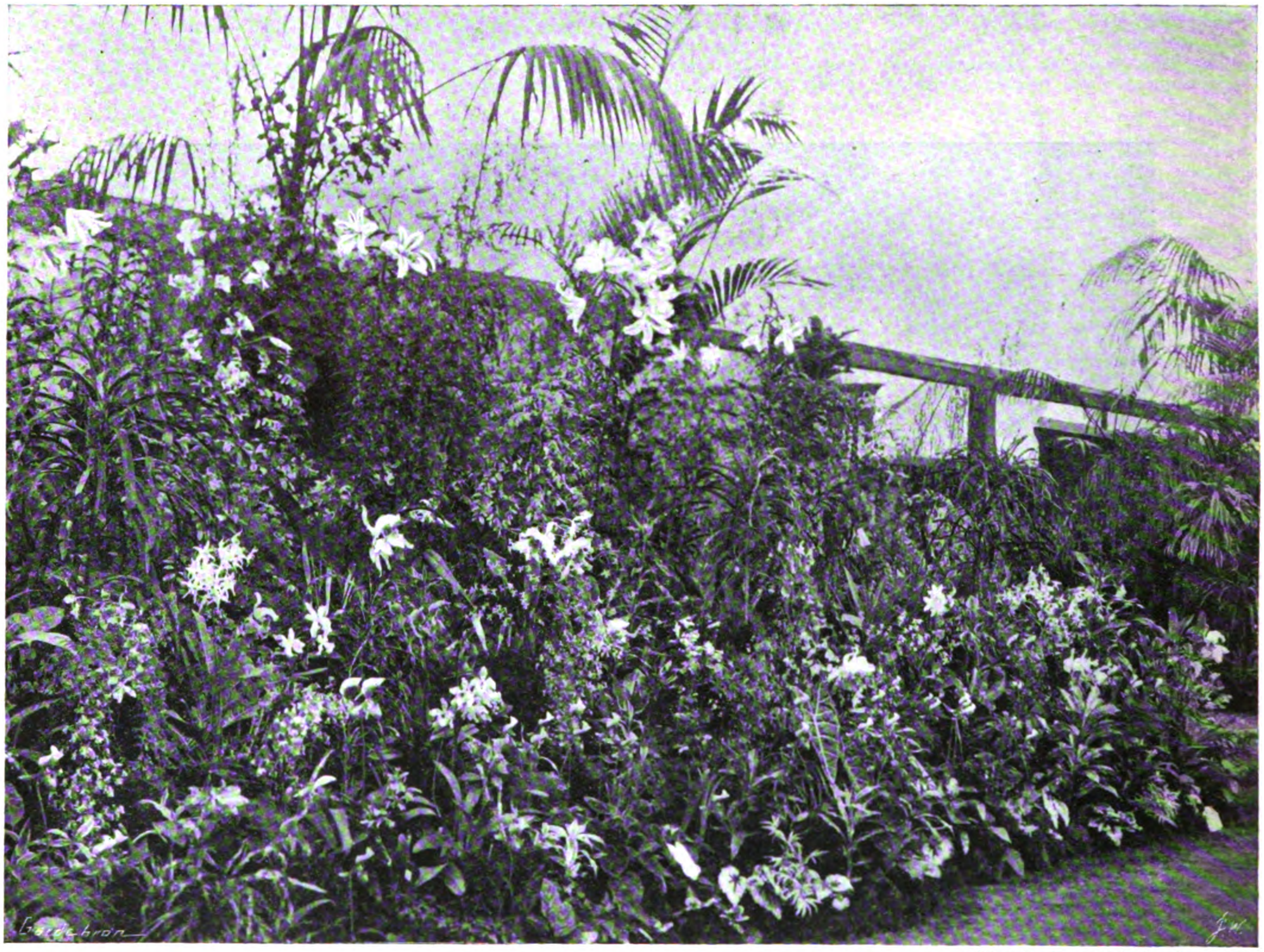
HORTICULTURE AT THE BRITISH EMPIRE EXHIBITION.

POTATO RESEARCH.

THE National Institute of Agricultural Botany, Cambridge, has a very interesting exhibit illustrating the Potato work of the Institute, and this is housed, together with other numerous scientific groups, in Gallery 11 of the Government Pavilion. Most of the exhibited work deals with the genetic and other characters in the Potato, and of especial interest is a tuber mutation or sport arising from Golden Wonder. In 1919 a tuber of Golder Wonder showed a sectional area in which the skin was of a light colour and of the same thickness as is found in the majority of varieties but contrasting strongly with the skin of the parent stock. The sectional area contained an "eye" which was cut out and grown in the following year, giving rise to a plant whose haulm corresponded exactly with Golden Wonder, but whose tubers could not be distinguished from the old variety Langworthy, and like both it and Golden Wonder are immune to Wart Disease. The mutational stock has been grown on in 1921-22-23, its characters remaining unaltered. Here was also a diagram illustrating the use of the "leaf index," which affords a mechanical means for checking synonymy of varieties. The leaf index is the average ratio of the breadth to the length of the lateral leaflet nearest the apex of an adult leaf. This ratio is always the same for any one variety. There are coloured illustrations showing experiments in the inheritance of the colour of skin of the Potato tuber and examples of correlation between flower characters and colours of tubers by which a breeder may recognise in many cases the type of tuber which a seedling will bear before the tubers may be formed. For example a white flower with blood-red anthers is associated with deep red tubers, coloured inside, while a purple "tongue" on the petal tip and a purple line of dehiscence of the anthers is invariably correlated with black tubers. Golden-brown anthers associated with any coloured flower are completely correlated with purple tubers.

Charts are also displayed in this exhibit giving the dates of maturity and the yields of some of the most important second-early summer varieties of Potatos, the conclusions being arrived at from trials over a two-year period at Ormskirk, and an excellent model is shown illustrating the method used by the Institute in determining the comparative yield of maturity tests. A smaller exhibition case is devoted to research in wart disease, illustrated by photographs and pickled tubers, as well as fourteen immune varieties from this year's trials at Ormskirk. There are also to be seen experiments on the heredity of immunity to wart disease. These show that immunity is inherited on Mendelian lines. Immunity is dominant to susceptibility but its presence is occasioned by two or more factors. Susceptibility may be due to the absence of immunity-determining factors or to the inhibition of such immune factors as are present.

Five types of Potatos, distinct in their reaction to wart disease, have been isolated. Charts giving statistics of the work the Government has done in controlling wart disease are also on view. Growing crops of immune varieties have been examined by Government inspectors since 1918 and the following acreages certified true to type:—1918, 13,725 acres; 1919, 23,481 acres; 1920, 40,665 acres; 1921, 28,433 acres; 1922, 23,713 acres; 1923, 17,732 acres. No Potatos may now be sold for planting unless they have been certified either as true stocks of immune varieties or as having been grown on land free from wart disease. Approximately 100,000 acres were so certified in 1923-1924. In the exhibit from the Manchester University there are a number of specimens of Potato foliage attacked by the various virus diseases.



[Photo by Kay and Foley, Southport.

FIG. 63.—SOUTHPORT FLORAL FETE: MESSRS. J. CYPHER AND SONS' GROUP WHICH WAS AWARDED THE SIR JOHN BRUNNER TROPHY OFFERED FOR THE MOST MERITORIOUS COMPETITIVE EXHIBIT (SEE P. 156).

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 79-84).

(*Continued from p.* 153.)

ENGLAND, MIDLAND COUNTIES.

HERTFORDSHIRE (*continued*).—The fruit crops generally are very good. Apples are a good average yield, and old trees of the following varieties have set far too heavy a crop and have been thinned:—Cox's Orange Pippin, St. Everard, Mère de Ménage, and Lane's Prince Albert. The quality of the fruits is good. Aphis and caterpillars have in no way proved troublesome, but during the wet month of June, scab was inclined to cause some trouble. Pears on old trees are a light crop, but young trees have had to be severely thinned of fruits. The same remark applies to Plums, with the exception of Victoria, which have cropped freely on old trees. Cherries have been an excellent crop and the black Aphis has been far less troublesome this season than usual. Peaches are good, but mildew was very prevalent on the trees during the early season; Damsons are a light crop. All bush fruit were very good and the quality excellent. Strawberries and Raspberries have been very satisfactory, but where watering was not carried out these crops were over very quickly. The soil here is of a light nature and free from stones, although resting on a bed of gravel. *T. Pateman, Brocket Hall, Hatfield.*

——During yet another season the prospects of a good fruit year have been unfulfilled. Many varieties of Apples, particularly dessert kinds, produced only a few flower trusses. I agree with one eminent writer that it is the amount of flower and not fruit produced which governs the future crop. Attacks of Aphis last year (a cause attributed to scarcity of Apples this year) was not severe here. Prolonged wet during the flowering period undoubtedly hindered fruit setting. It is unusual for us to record a poor crop of Apples. Newly planted trees and culinary sorts have fared better. The few flower trusses produced irregularly formed fruits; these, together with a number of fruits which might have reached maturity, were blown off by the gale of July 3. Pears are bearing a heavy crop, and bush fruits were good. Strawberries, although up to last year's standard, were not so numerous as we expected. The dry period setting in after heavy rains, from which they did not benefit, caused these and all ground crops to suffer quickly. Plums are again a disappointing crop, but Raspberries promise to give a good yield. Our soil is mainly of a heavy nature. *A. J. Hartless, King's Walden Bury Gardens, Hitchin.*

LEICESTERSHIRE.—The fruit crops, after good promise of bloom (except Plums, which developed very few flowers), are rather disappointing except bush fruits. The chief reason of the failure was because the wood of trees was not ripened sufficiently last autumn through lack of sunshine. Our soil is heavy to light in parts. *W. Cox, Prestwold Hall Gardens, Loughborough.*

NORTHAMPTONSHIRE.—There are very good crops of all fruits in this district, with the exception of Apricots and Plums, which are failures, owing to damage by frost when the trees were in flower. Peaches and Nectarines on walls in the open are carrying good crops, and the trees are clean and healthy. Strawberries were above the average and the fruit of first-rate quality; but owing to the great heat experienced during the second week in July the fruits of late varieties ripened simultaneously with those of the maincrop sorts. Varieties that do best in this locality include The Duke, King George V, Leader, Fillbasket, Givon's Late Prolific, and Laxton's Latest. Currants and Raspberries yielded remarkable crops of very fine fruit. *F. W. Gallop, Lilford Gardens, near Peterboraugh.*

——Our soil varies considerably; that of the kitchen garden is light over-lying limestone rubble, and all crops are good except Plums, which failed to blossom. Cherries flowered freely but the trees present a very sickly appearance (only Morello Cherries are grown). The soil of our Apple orchard is rather stiff loam over blue clay; some Apple trees are carrying good crops but others are very thinly cropped. *Arthur R. Searle, Castle Ashby, Northampton.*

NOTTINGHAMSHIRE.—Fortunately the blossoming period of fruit trees was much later than usual this year, and with the exception of Plums, Peaches and Apricots, we had a fair amount of weather favourable to fertilisation. Plums, with the exception of Victoria and Coe's Golden Drop, carried a lot of blossom, and the usually prolific varieties, such as Czar, Black Diamond and Pond's Seedling, carry heavy crops. Apples and Pears have required a lot of thinning and scab has been particularly severe on James Grieve, Pott's Seedling and Duchess of Oldenburg Apples. Taken all round it is a most satisfactory fruit year. *Wm. Rae Scott, Bunny Park Gardens, Bunny.*

——Apples are an average crop. Lane's Prince Albert and Bramley's Seedling are, perhaps, the most satisfactory. Pears are a good crop over the average yield and look clean and well. Soft fruits were good. Strawberries have seldom looked better, but owing to the sunny, dry weather the ripening period was a very short one. *S. Barker, Clumber Gardens, Worksop.*

OXFORDSHIRE.—With the exception of bush fruits and Strawberries the fruit crops are not up to my expectations at the early part of the year. All trees carried an abundance of flowers, but owing to continued dull and wet weather the blossoms did not set. Insect pests have not been nearly so troublesome as last year. *Victor Gammon, Eynsham Hall Gardens, Witney.*

(*To be continued*).

A TRANSPLANTED NECTARINE TREE.

THE tree of Pineapple Nectarine illustrated in Fig. 64 is a very successful case of transplanting for it has fruited freely the following season, and in addition to having produced a splendid crop of fruits, has made fine new growth; the leading shoots have extended some three feet this year. We are indebted to Mr. F. J. Chambers, of Woodhatch Lodge Gardens, Reigate, for the photograph and the following particulars: "When I took charge of these gardens in September, 1922, the tree was growing in an early house and labelled Cardinal. It carried a few fruits last year, but owing to it being a mid-season variety, I decided to transplant it and plant an earlier variety in its place. The roots were given a copious watering about five days before the tree was moved. In the meantime the new site was prepared, the hole for the reception of the roots being dug eight feet by six feet and two feet deep. The whole of the old soil was removed and a compost prepared of heavy loam, well-rotted manure, bone meal and wood ashes, the proportion being three barrow-loads of loam, one of manure, half of mortar, one quarter of wood ashes and three 32-potfuls of bonemeal. Some of new soil was placed in the bottom of the hole and made firm. The tree was lifted carefully and the strong roots were shortened about four feet six inches from the stem. The roots were spread out carefully, and soil consisting of half leaf-mould and half manure from a spent mushroom bed, mixed with fine mortar was placed between them. After this material had been well watered in, the hole was filled with the prepared compost and water applied as the work of filling the hole was proceeded with. The transplanting was done in October and, as the foliage was still hanging the tree was syringed twice daily until the leaves had dropped. The result is seen in the photograph. The tree has grown and fruited well and is maturing a crop of 133 excellent fruits."

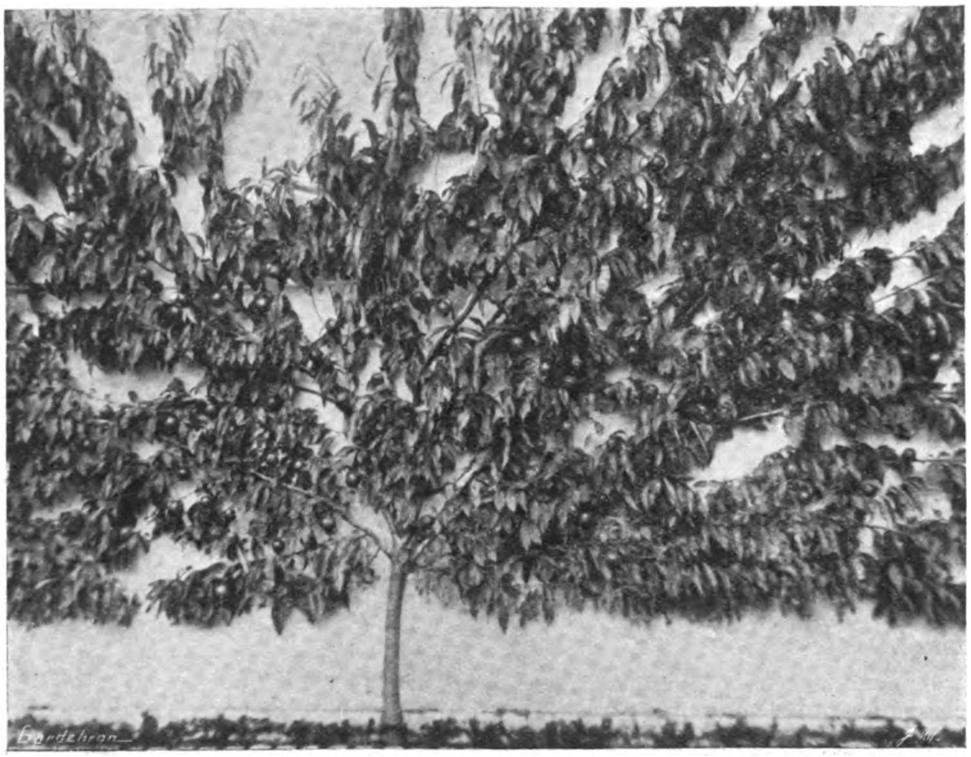


FIG. 64.—TREE OF PINEAPPLE NECTARINE, TRANSPLANTED IN 1923, BEARING A CROP OF 133 FRUITS.

FRUIT GARDEN.

PLUMS.

THERE is an almost entire absence of fruit on our standard Plum trees, but wall trees are giving good average crops. On a south-east wall, three hundred feet long and twelve feet high are growing Early Rivers, Kirk's, Green Gage, Oullin's Golden Gage, Late Transparent Gage, Golden Transparent Gage, Washington and Victoria, which is the best Plum for all purposes. These have all been heavily thinned of their fruits. On the south-west wall the crop is not so heavy, the trees being Kirk's, Oullin's Golden Gage, Belgian Purple, President, Magnum Bonum and Victoria. The trees have been planted about twelve years and have been root-pruned when required, this being essential to good cropping. The summer pruning of Plum trees should be done on frequent occasions, and it is far better than cutting large shoots off in the winter. *A. B. Wadds, Englefield Gardens, Reading.*

VEGETABLE GARDEN.

THE LEEK.

THE early history of the Leek, as Mr. Dicks points out in his article upon this subject (pp. 134 and 135) is not at all certain. I was interested, however, in the quotation he gives from Vilmorin as follows: "Notwithstanding the different names given by botanists to the two plants, the Leek and the Great-headed Garlic are probably identical, the only difference between them being that in the case of the latter cultivation has developed the production of cloves, while with the former the object has been to develop the leaves in such a manner that they both be numerous and cover one another at the base for the greatest distance possible."

Linnaeus, of course, was practically of the same opinion, and he suspected that the Leek was evolved from Allium Ampeloprasum. There is a local tradition in Musselburgh amongst some of the older growers that the Leek which bears the name of the ancient burgh was derived from a wild form which grew at one time on the links just outside the town. I have never been able to find A. Ampeloprasum on the links, but this is not to be wondered at when one considers how long the game of golf has been played there, and a subject such as A. Ampeloprasum would be certain to disappear. It flourishes, nevertheless, in a wild state in the immediate vicinity.

In recording this tradition for what it is worth, coupled with the opinions of Linnaeus and Vilmorin, it is, at the same time, as well to remember that the original Musselburgh Leek was a most distinct form. In enumerating the best of varieties in his article, Mr. Dicks was careful to point out that the differences between some of them are not very great. There can be no doubt about that observation, but, as a matter of fact, the Leek of the old Musselburgh growers was a form of distinct character. In the course of years it attained great popularity and was in great demand. The result was that substitutes were sold for it, and to-day few, very few, of the growers in and around Musselburgh are in possession of the true stock. It exists in the hands of one old florist, or did up to three years ago.

I observe that Mr. Dicks gives the credit of raising the Musselburgh Leek to Thomas Handasyde, Seedsman, Fisherrow, and the date is given as 1830. I think that it was grown locally long before that date. About this period there were several of the Handasydes in business in Mid-Lothian as seedsmen and nurserymen, and all of them were clever florists and men of outstanding ability in their profession. Thomas was evidently a good judge of plants, and he had a keen eye for improved forms of flowers and vegetables. He is the man who is credited with having raised the true East Lothian Stock. Some years ago I was investigating the origin of this Stock, and the plants which were found in the old garden at Prestonkirk were raised, so it was discovered, from seed obtained from Handasyde of Fisherrow. This old Stock, and there is only one form of it and the flowers are a rosy-crimson, is quite distinct from any other, and was grown in East Lothian long before Handasyde offered it. He may have discovered its value and offered it as a novelty in his day, and I am of the opinion that he did the same with the Leek. *George M. Taylor, Edinburgh.*

IMPERIAL BOTANICAL CONFERENCE.

(*Continued from p.* 152).

THE aim of the session devoted to "Biological Problems of Cold Storage of Apples" was to present the biological and physiological problems that have been encountered in the scientific study of the keeping properties of Apples and the best methods of storing them, which is being carried out by a staff of botanical workers supported by the Food Investigation Board of the Department of Scientific and Industrial Research.

The problems are of many grades, some narrow and biochemical, others broad and biological. In practice no one problem can be investigated in isolation, or presented quite independently in discourse. A general introduction was therefore provided giving a brief dissection of the interwoven grades of problems that are involved in the subject.

The tissues of a stored Apple exhibit a steady drift in their condition with time, labelled by the consumer as unripe, ripe and rotten. Considering this physiologically we find we have to deal with successive stages in what may be called the ontogenetic metabolic drift, which characterises the progress of cells from adolescence through maturity to death. Work on stored Apples concentrates attention on the later or senescent stages of this drift, with which is associated the colour change from green to yellow and brown. This drift in Apples is well marked by changes in chemical composition and in metabolic activity, as in respiration. We have to realise that a state of equilibrium at no time exists, and that actually the metabolism of each cell is never quite the same to-day as it was yesterday.

Another set of problems arises from the fact that the unit of all our physiological investigations—the whole Apple—cannot be regarded as homogeneously constituted. Even if all the cells of the flesh of one Apple were inherently identical, physiologically, they are not all under identical metabolic conditions, so that at any moment of investigation they may well be at different stages of their individual ontogenetic metabolic drifts. On analysis it is found that the distribution of organic acids and other substances in the flesh is not uniform but tends to show radial gradients, distinguishing the centre of the flesh from the periphery. When moderately injurious substances or conditions of storage are applied to Apples, it is rare for all regions of the flesh to be affected equally; thus with excess of carbon dioxide the whole centre may become brown and killed while the periphery remains in perfect condition—"brown heart" of Apples. Other injurious effects may be quite superficial—as "superficial scald."

The difficulty which this heterogeneity creates for the investigator is this, that if the cell-population of an Apple is not practically homogeneous, then the observed progress of respiratory activity of a whole Apple, during senescence, does not give a true picture of the course of respiration of a single constituent cell, but tends towards being only a statistical curve of the distribution of states of greater or less activity amongst the cell-population.

The combination of these two heterogeneities is a considerable obstacle to progress, for it makes the exact repetition of experiments in sequence almost impossible, and the utilisation of simultaneous control experiments very difficult.

In the first communication it was shown by Dr. F. F. Blackman that the senescent leaves present a metabolic drift with the same characteristics as that of the Apple, and the problem of the essential causation of the drift was discussed.

The control of the rate of progress of senescence is the part of the general enquiry that bears directly on economic practice. The rate of senescence is made evident by the quicker or slower succession of the series of symptoms associated with ripeness and rottenness. It is not in itself a progressive change in an amount of matter, and so is not to be treated on physio-chemical lines. It may possibly be brought about by some change in concentration of cell constituents but at present the rate of the drift has to be treated empircially.

The arrival of the last phase alone, that of brownness, can be timed by inspection. At the surface of Apples this is usually associated with the germination of the ever-present spores of rot-fungi, but in the sterile centre of the Apple this can be reached without fungal invasion. In commercial practice, when 10 per cent. of the Apples have reached the last phase, the contents of a store have to be marketed at once: but a statistical study of the ultimate fate of the whole store-population, with a determination of the invading fungi, has been carried through by Mrs. Kidd.

Internal evidence of the rate of the senescent drift in all stages is obtained by chemical analysis of Apples in different storage conditions. The drift of the various carbohydrates, of organic acids and acidity, of the nitrogenous substances, and of pectin changes in the cell-walls are being followed systematically.

Such analyses involve the destruction of the Apple; at present we have but one method of studying the living Apple continuously throughout its drift; and that is by measuring its respiration.

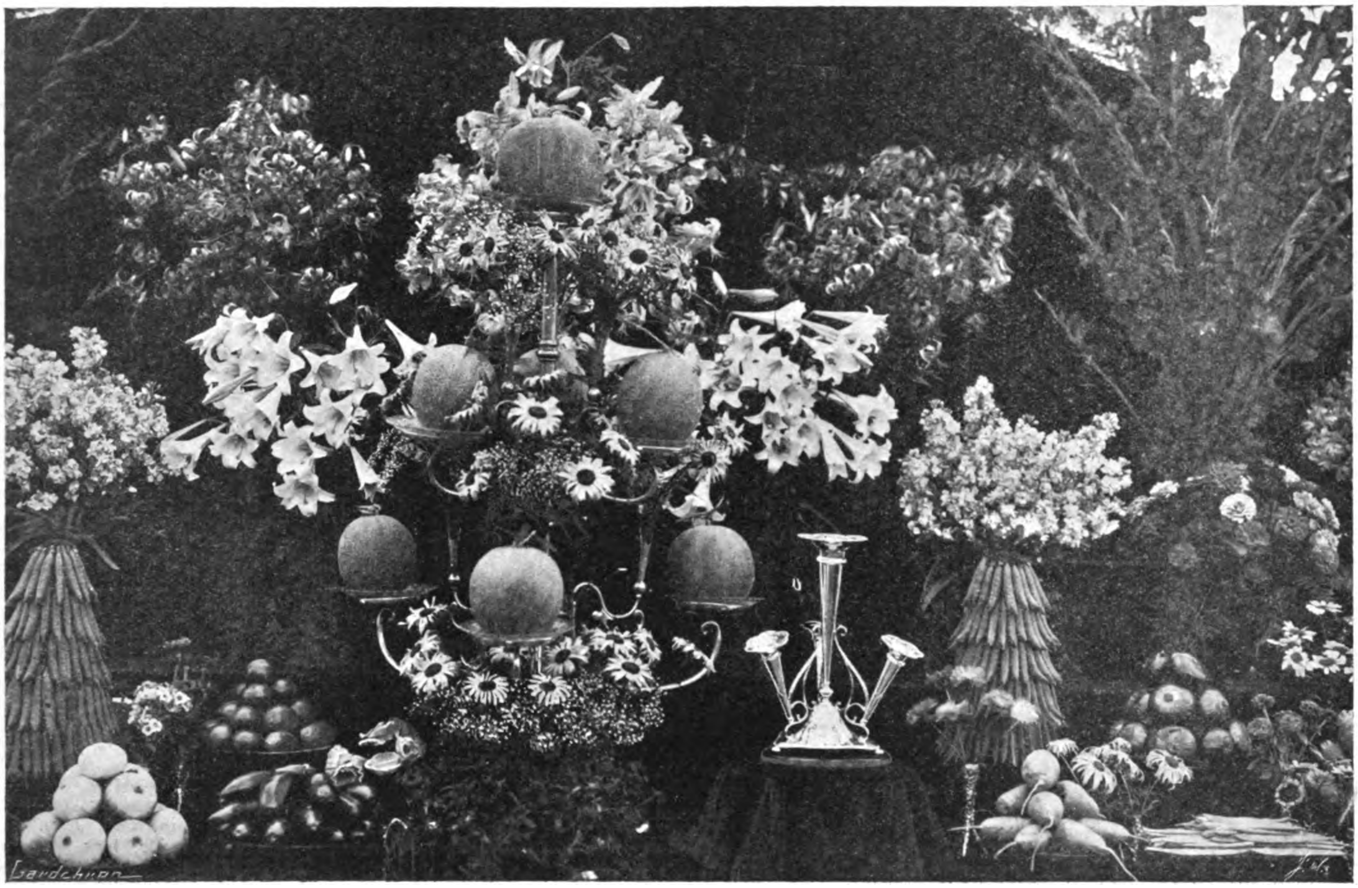
(*To be continued*).

HOME CORRESPONDENCE.

Bishop's Park, Fulham.—The floral displays in the London Parks at the present time are wonderful—more wonderful, perhaps, to the Northern visitor than to the average Londoner, for gardening is difficult near to industrial towns. One of the finest sights is to be seen at Bishop's Park, Fulham, and although it is one of the smaller open spaces of London, the display, nevertheless, is worthy of a visit from all interested in gardening. Looking down from Putney Bridge a fine view is obtained of three large, pattern-beds, consisting of the bright Pelargonium Harry Hieover, Centaurea candidissima, Iresine Lindenii, Alyssum Little Dorrit, Lobelia Mrs. Clibran and Mimulus. A hedge of Golden Privet forms a fitting background to masses of Pelargoniums, Antirrhinums, Anthericums, and Gladioli, while there are long beds filled with Fuschias, Pentstemons, Standard Ivy-leaved and Paul Crampel Pelagoniums and Celosia pyramidalis—all of which are well-flowered and in a perfect state of health. Another fine effect is obtained by the judicious use of Begonia semperflorens Loveliness and

B. s. Luminosa, intermingled with Alyssum and dot-plants of Fuchsia Mrs. E. Smith, and at one spot the verdant, well-kept lawn is broken with a fiery mass of colour provided by large, pyramidal specimens of Paul Crampel Pelargoniums. Other beds are occupied by Antirrhinums, Schizanthus and Salpiglossis, the delightful colourings of which are most pleasing. Moreover, all the plants are neatly and clearly labelled, a condition of affairs which adds interest to the display. The superintendent, Mr. F. H. Hughes, is to be congratulated in giving the residents of Fulham so magnificent a floral feast. *A Northern Visitor.*

Flower Show Judges (see p. 100).—I was pleased to read Mr. Macself's remarks on flower show judges. In many cases judges are called on to officiate at important shows year after year, some after they have gone into retirement and practically lost touch with the newer kinds and varieties. By introducing new judges interest in a particular show would be widened, and probably attract new exhibitors, and bring back some of the old exhibitors, who may have considered they had a grievance in the past. While I have the greatest possible respect for old age, I may point out that failing eyesight, necessitating the use of strong glasses, may lead to a wrong conclusion. I know from experience that keenness of youth makes as much for correctness in judging as the complacency of older men, who often waive their hands to what they consider the first, second, or third prize exhibits without a very close scrutiny. I would also point out that judges who officiate year after year at the same show can sense the particular exhibits and know perfectly well who they are shown by. This is not desirable. *One of the Past.*



[*Photo by Kay and Foley, Southport.*

FIG. 65.—SOUTHPORT FLORAL FETE: PART OF MESSRS. SUTTON AND SONS' EXHIBIT WHICH WAS AWARDED THE MAYOR OF SOUTHPORT'S CUP AS THE BEST TRADE DISPLAY (SEE P. 157.)

SOCIETIES.

SOUTHPORT FLORAL FÊTE.

(*Continued from p.* 157)

A MORE extended and quieter inspection of the Floral Fête held at Victoria Park, Southport, than was possible during the rush connected with judging, opening ceremony, etc., on August 27, serves only to confirm all that was written in the account which appeared in our previous issue. We desire to emphasise the astounding horticultural success of this initial effort on the part of the Southport Corporation. No series of exhibitions of horticultural products ever had so magnificent a send-off as this one, for it must be observed that the Southport authorities intend to "carry on," and their hope is to make their show the finest in the country—next to Chelsea.

Where so many have worked splendidly it may appear invidious to mention any, but bare justice alone compels us to refer to several of those upon whom the major portion of the work and responsibility have fallen. Alderman Aveling, Mayor of Southport and formerly Chairman of its Parks Committee, deserves special mention, for this new venture has added considerably to the onerous duties attaching to his position; his gracious kindliness, courtesy and hospitality have made for him many new friends among horticulturists and have undoubtedly encouraged the already expressed desire of exhibitors to "come again next year if possible." Mr. Councillor E. Clayton, Chairman of the Fête Committee, has not spared himself in his endeavours to make the show a success, so that it may become an annual event of the first importance among the many attractions of Southport. Alderman E. Wood, a former mayor, and at present Chairman of the Parks and Foreshore Committee of the Corporation, has also won the admiration of exhibitors and judges for his zeal and his successful efforts to make everyone feel happy and desirous of coming again. Upon Mr. T. E. Wolstenholme, the Corporation's Publicity Agent, who has acted as Secretary to the Fête Committee, has fallen the bulk of the detail work connected with the organisation of the Fête, and he has come through the ordeal with flying colours. Last, but not least of those who have "borne the burden," is Mr. W. Clark, the Show-ground Manager and Superintendent of the Southport parks and open spaces. He, too, has achieved equal success as a showman and as a gardener, for the many and varied floral beauties of Southport are a tribute to his skill and energy.

The Floral Fête and the Horse-leaping events were estimated to cost £7,500. We believe that subscribers' and season tickets brought in about £1,000; the takings at the gate were good but we fear they were not sufficient to make the show a financial success. However, the promotors did not expect the function to be a paying concern in the first year, and we understand they are quite satisfied with the financial results of the undertaking, as they look to future similar events to pay for the necessary large initial outlay. So far as we could gather Southport Floral Fête will not be regarded as a purely money-making venture.

As the schedule provided for 246 classes and we were informed there were 1,200 entries, readers will quite understand it is possible to refer only to the principal competitive exhibits, nor will our available space permit detailed reference to the magnificent trade displays which added so greatly to the beauty and educational value of the show. The awards made to these latter were reported on page 157.

Rock Gardens.

The space allowed for each rock garden was 750 square feet; there were nine exhibits arranged out of doors near the entrance to the park. As already notified the Silver Trophy and first prize was won by Messrs. **T. Hayes and Son**, Keswick, with a pleasing exhibit in which, as always, this firm used finely weathered rock in a very natural fashion and planted the spaces with autumn-flowering alpines and dwarf shrubs, and the uplands with choice Heathers.

As rock gardens are a feature of many large horticultural exhibitions, readers may find interest in the class specifications at Southport and the basis of pointing the judges were required to follow in arriving at their awards. They were as follow:—

"Maximum points will be awarded as under for:—(*a*) The design, proportion and shape, 8: (*b*) Simplicity, direction, continuity of the main lines produced by the ridges of stone (the placing of rocks and plants to convey an illusion of distance is included in this, also the design connected with any display of water), 20; (*c*) The setting of the stones (picturesque laying consistent with nature and general quiet effect), 14; N.B.—Great attention should be given to the placing of isolated stones, as this affects both 'design' and setting); (*d*) The proportion of each colour used in planting the rockeries, 10; (*e*) The colours chosen in planting and their relative placing in harmony with one another, 18; (*f*) Skill in regard to grass laying, careful planting, and hiding cement, background, etc., 6; (*g*) Quality and rarity of plants, 24; total points, 100."

The second prize was awarded to Messrs. **Clibrans** who made the most of their position in a corner formed by a sharp turn in the background belt of trees and shrubs; the distant portions of their exhibit were most praiseworthy, but the parts nearer the visitors showed some weakness in regard to planting—a scantiness, in fact, that was emphasised by the use of a large and none too picturesque Euonymus. Mr. **P. Gardner**, Ilkley, won third prize and made good use of Violas, Sedums, and Heathers in his planting. Mr. **Whitelegg**, Chislehurst, was awarded fourth prize for a bold and effective arrangement in which the rocks were beautifully weathered. We wish that the actual points awarded to each exhibit in this competition had been given and placed in a conspicuous position.

The other exhibitors in this prominent and important class were Messrs. **Pulham and Sons**, Newman Street, London, W. who had a most attractive display; Messrs. **W. Brown and Son**, Gretby Hill, Ormskirk; Mr. **A. J. Rigg**, Kew Nurseries, Southport; Mr. **Chas. H. Elston**, Parkfield, Liverpool; and Messrs. **Rashly and Co.**, Mytholomrya, Yorkshire. The Rock Garden section was rendered additionally attractive by the inclusion of a Heath Garden, beautifully arranged by Messrs. **Hayes and Son**, with choice hardy Heaths, low, weathered stone and a tiny peaty pool typical of many a moorland scene.

Hardy Flowers.

Messrs. **Bees, Ltd.**, were the only exhibitors in the class for eighteen bunches of hardy flowers, and their fine exhibit thoroughly merited the first prize awarded; their outstanding bunches were of Gladiolus White Giant, Pyrethrum Firefly, and Hollyhock Peach Blossom.

In an amateurs' and gentlemens' class for a dozen varieties of hardy flowers there was a good competition and here **G. Garnett**, Esq. (gr. Mr. J. Sidman), Lancaster, won with capital bunches of Scabious, Phloxes, Potentilla Gibson's Scarlet, Veronica, Inula, Moon Daisies, Montbretias, Astilbe, Scutellaria and Sidalcea.

A. J. Taylor, Esq. (gr. Mr. Prentice), Formby, was placed first for six varieties of Gladioli, three spikes of each, for splendid specimens of Maréchal Foch, Pink Perfection, Schwaben, White Giant, Odin, and Red Emperor; second, Mr. **J. Blair**, Congleton.

Pansies and Violas were grandly shown in numerous classes and Mr. **James Pane**, Killiarn; Mr. **J. Douglas**, West Lothian; Mr. **J. Wood**, Guiseley; Mr. **J. Mathews**, Mid-Calder; and Mr. **H. Bairstow**, Queensbury, Bradford, were the most successful competitors. It is only in the cool northern districts that such fine specimen blooms of Pansies and Violas may be seen, and where they are grown for exhibition purposes great enthusiasm prevails.

Carnations and Sweet Peas.

Mr. **C. Engelmann**, Saffron Walden, obtained the Rowntree Silver Challenge Trophy, which, together with £25 in cash was offered as the first prize for a collection of perpetual-flowering Carnations arranged on a space twenty feet by five feet. This fine exhibit contained splendid blooms of Laddie, Tarzan, Sheila Green, Saffron, and other fine varieties, while its arrangement was very fine.

The J. P. Rudolf Challenge Cup, offered for a collection of Carnations arranged on a space ten feet by four feet was won by Mr. **Keith Luxford**, Harlow, with a capital display of good blooms representing leading varieties.

Carnations, six varieties, ten blooms of each, were best shown by **T. J. Forrest**, Esq. (gr. Mr. H. R. Freeman), Blackburn, who had fine flowers of Mrs. W. Hemus, Mary Allwood, Matchless, Enchantress Supreme, Triumph and Benora; second, the Hon. **G. E. Vestey** (gr. Mr. B. Collins).

The best collection of Sweet Peas arranged on a space twenty feet by four feet was from Messrs. **Herd Bros.**, Penrith, who had a very pleasing display of good blooms arranged in baskets; Matchless, Hercules, Mascott Purple and Hawlmark Salmon were all very well shown; second, Mr. **A. S. Dunton**, Wolverhampton; third, Mr. **W. Bond**, Formby. The Messrs. Thompson Bros.' Silver Trophy accompanied the first prize in this class.

The Gold Medal and cash first prize for a dozen bunches of Sweet Peas were won by Mr. **W. Weaver**, Mold, with superb spikes of Cecily, Charity, G. Shawyer, Hebe, Matchless, Austin Frederick, Annie Ireland, Royal Scot, King Mauve, Edna May, Climax and Fairy Queen; second, Mr. **G. Randles**, Marford, Wrexham; third, Mr. **W. A. Weston**, Keighley—seven entries.

Floral Designs.

This section of the show was a good one but, as a section, it fell below the high standard we have seen on some occasions at Shrewsbury and York; nevertheless some of the exhibits were excellent although we could not find anything of outstanding excellence or of novel design among the numerous entries in the classes for table decorations.

Mr. **Stather** led in the open class for a dinner table decoration with a rich design in Odontoglossums and white and mauve Orchids; to our way of thinking the centre piece was a trifle heavy; second, Messrs. **W. J. Garner and Son**, with a pleasing light design in Gloriosa superba and Francoa ramosa; third, Mr. **S. Warren**, Darwen—twelve entries. In another class (Roses only) Mr. **W. Sharp**, Manchester, led, with Miss **Newsham**, Aughton, second.

First prize for three bouquets was won by Messrs. **W. J. Garner and Son**, Altrincham; the bride's bouquet was composed of white Cattleyas, Odontoglossums and Carnations, and we were glad to see the Cattleya flowers were placed right way up; the bridesmaid's bouquets were bright designs in Gloriosa blooms, Francoa ramosa and Codiaeum leaves; second, Mr. **C. Vickers**, Leicester; third, Mr. **W. Sharp**, Manchester five entries.

Mr. **Montague Stather** showed the finest hand bouquet, a superb affair composed chiefly of Cattleya Warscewiczii and some hybrids of C. Dowiana parentage; second, Messrs. **W. J. Garner and Son**; third, Mr. **C. Vickers**.

Mr. **Stather**, Cottingham, showed the best bowl or vase of flowers and used mauve Scabious most effectively with a few pale-rose, mauve-eyed Phlox sprays. In another class Messrs. **W. J. Garner** won first prize for a bowl with Coreopsis and crimson-scarlet Lobelia cardinalis spikes. Mr. **Stather** was also successful for a basket of flowers with a dainty arrangement of Odontogossums, Odontiodas and Cattleyas; second, Messrs. **W. J. Garner and Son** with a big and very handsome design, carried out with fawn and flame-coloured Primulinus Gladioli, Vallota purpurea, bronze Chrysanthemums and graceful Francoa spikes.

Fruit.

The Southport Hotels and Hydros presented a Challenge Trophy value £50, and to this a cash award of £50 was added as first prize for twenty-four dishes of fruit arranged on a table ten feet by four feet, and suitably decorated. This fine award was won by the **Duke of Newcastle** (gr. Mr. S. Barker) Clumber, Worksop, with a capital collection, which merited 188¼ points (why was not the maximum obtainable also stated?). He showed good bunches of Madresfield Court, Chasselas Napoleon, and Muscat of Alexandria Grapes; Cox's Orange Pippin, and Ribston Pippin Apples; Royal George and Dymond Peaches; Dr. Jules Guyot, and Triomphe de Vienne Pears; Dryden and Pineapple Nectarines; Jefferson Plums; Brown Turkey Figs, and Universal Favourite and Ringleader Melons; pink Carnations and Francoa sprays were used as floral decoration. The second prize went to Mrs. **T. S. Hall** (gr. Mr. G. F. Richardson), Chard, Somerset, who obtained 161 points; some heavy clusters of Black Hamburgh Grapes were shown in this collection and also a fine dish of Peregrine Peaches.

The **Pwll-y-crochan Hotel** (gr. Mr. W. Owen), Colwyn Bay, obtained the first prize for a dozen bunches of Grapes, some fine bunches of Madresfield Court and Muscat of Alexandria figured in this collection; second prize was awarded to the **Duke of Newcastle**, Clumber, who had capital examples of Muscat Hamburgh, Madresfield Court and Cannon Hall—it would have served a useful purpose and saved a good deal of comment if the bunches in this class had been pointed separately and the points announced on a card; quite a few folks considered the award should have been reversed.

Mr. **Owen** led for a pair of bunches of Muscat of Alexandria and Mrs. **Hall** was awarded first prize for black Grapes with Appley Towers; red berried clusters of Muscat Hamburgh from **Edmund Lord**, Esq., Rawtenstall, were placed second, and finely coloured but smaller-berried bunches of the latter variety, shown by the **Duke of Newcastle**, were placed third. The pair of bunches of Madresfield Court shown from Clumber were first in their class, and for Black Hamburgh, Mr. **E. Lord** was placed first.

Vegetables.

In the open class for a dozen distinct kinds of Vegetables there were nine competitors and the chief prize was won by Viscount **Hambledon** (gr. Mr. W. Turnham), Henley-on-Thames, who had a fine collection. This exhibit was awarded a Gold Medal and also *The Gardeners' Chronicle* Silver-Gilt Medal as the best amateurs' exhibit in the Vegetable section. All the specimens were of fine quality and the set consisted of Superb Pink Celery, Ailsa Craig Onions, All-the-Year-Round Cauliflowers, Tender and True Parsnips, Peerless Peas, Best of All Tomatos, Delicacy Cucumbers, New Red Intermediate Carrots, Sutton's Prizetaker Leeks (very fine), Prize-Winner Runner Beans, Black Beet, and Dunottar Castle Potatos; second, Mr. **W. Taylor**, Shrewsbury; third, Mr. **W. Robinson**, Forton.

Messrs. Sydenham's first prize for nine kinds of vegetables was secured by Mr. W

Taylor, Shrewsbury, with fine examples of Ailsa Craig Onions, good Peas, Tomatos, Carrots and Cauliflowers. The same exhibitor won the leading award in a class provided by Messrs. Dickson and Robinson, and here he had Peas, Cauliflowers and Celery in fine condition.

Mr. W. Robinson, Forton, near Garstang, led in Messrs. Clibran's class for nine distinct kinds; his Leeks, Carrots and Tomatos were conspicuously good. In Messrs. J. Carter and Co.'s class, also for nine kinds, Dr. J. A. Roy (gr. Mr. A. Falconer), Cheadle, Cheshire, was first prize-winner and excelled with Cauliflowers and Cucumbers.

Messrs. Sutton and Son's class for nine kinds brought out six competitors and the premier award went to Viscount Hambledon for superb specimens of Ailsa Craig Onions, Prizewinner Beans, Early Giant Cauliflowers and good Leeks, Carrots, Tomatos, Potatos, and Celery.

There was a wonderful competition in the numerous single dish classes, these exhibits filling the greater part of the outer staging in one big tent. Potatos were superbly shown, and some of the Cauliflowers were of mammoth size and beautifully clean and white.

Non-Competitive.

The Hon. A. E. Vesty, Southport, contributed a handsome group of Orchids in which there were finely grown Cattleyas, Laelio-Cattleyas, Brasso-Cattleyas, Odontoglossums and Odontiodas. The exhibit was well arranged and the exhibitor was awarded a Gold Medal. Mr. J. Carlisle was also awarded a Gold Medal, while Mr. Macdonald, Harpenden, was awarded the Hartley Gold Medal for the most novel and distinct exhibit in the non-competitive section. Mr. Macdonald showed a charming "Grass Garden" which was greatly admired. Messrs. Blackmore and Langdon were awarded a Silver Medal for their exhibit of Delphiniums and Phloxes.

SANDY HORTICULTURAL.

The fifty-first exhibition of the above Society was held as usual in the park of Sandye Place by kind permission of Mrs. Graves. There was a remarkable display of flowers, fruits and vegetables and an appreciable increase in the total number of entries compared with other years. The weather was delightfully fine, and the attendance at 5 p m. was 600 more than last year.

In Class 1, Division A, open to all, prizes to the value of £31 were offered for a group of hardy cut flowers in a space of twenty feet by eight feet. In spite of the variable weather the flowers exhibited were of excellent quality. The first prize was awarded to Mr. J. W. Forsyth, Putteridge, Luton. For a collection of Roses arranged for effect on a table fifteen feet by four feet, Messrs. Harkness and Co., Hitchin, were placed first for grand blooms of such varieties as Golden Emblem, K. of K., Mme. Abel Chatenay, Queen Alexandra, Ophelia and W. Clark. In a class for a collection of Dahlias, Messrs. J. Cheal and Sons, Crawley, were placed first with a fine exhibit including Cactus, Pompon, Show and Fancy varieties.

Mr. G. Burch led in the class for forty-eight Rose Blooms in not fewer than thirty varieties, while Mr. G. J. E. Pryor was placed first in a class for twenty-four Roses in not fewer than twelve varieties.

In the class for a trade exhibit of vegetables, open to all, Messrs. Cooper and Son, Bedford, were the only exhibitors; theirs was a meritorious exhibit and was awarded the first prize.

In a class for twelve cut stove and greenhouse flowers, Sir Charles Nall-Caine (gr. Mr. T. Pateman) was placed first, and also led for twelve bunches of hardy flowers.

Competition in the fruit classes was keen and showed a marked improvement on other years. In the open classes the Earl of Sandwich and Sir Charles Nall-Cain secured most of the first prizes. For a collection of hardy fruits, ten distinct varieties, the Earl of Sandwich (gr. Mr. Prowting) led with a fine display, Sir Charles Nall-Cain being second. But in a class for a collection of ripe dessert fruit, Sir Charles was an easy first prize-winner, the Earl of Sandwich being second, and E. Francis, Esq., The Hoo, Welwyn (gr. Mr. Gillings), third

In the classes for single dishes of fruit Sir Charles Nall-Cain was first for Peaches (outdoor), Nectarines, scarlet and white-fleshed Melons, Cherries, Figs and Gooseberries; while the Earl of Sandwich was first in several classes including those for culinary and dessert Apples and the six heaviest Pears.

In the class for a collection of nine dishes of vegetables there were nine entries, and the collective exhibits made a fine display. Sir Charles Nall-Cain was placed first, and the same exhibitor was placed first in the following classes:—(*a*) six dishes of Potatos, (*b*) twelve Onions, (*c*) twelve Kidney Potatos, (*d*) three Beets, and (*e*) Lettuce; while the Earl of Sandwich was first for (*a*) Peas, (*b*) Runner Beans, and several other classes.

In the cottagers' section the produce shown was excellent in every respect, and special mention may be made of Carrots, Onions, Parsnips and Runner Beans. The chief prizewinners were Mr. Taylor, Irtlingboro, and Mr. Robinson, St. Neot's.

There were twenty-five decorated tables all of great excellence. The Society provided four classes for decorations of Roses, Sweet Peas, Carnations and any other flowers. The chief prizewinners were Miss Hill King and Mr. Robinson, Sharnbrook.

ROYAL HORTICULTURAL OF PERTHSHIRE.

The 118th annual exhibition of the above Society, which was held in the City Halls, Perth, on the 15th and 16th inst. proved to be one of the best exhibitions held since 1918 and closely approximated to the pre-war shows both as regards the quality and number of the exhibits. The entries showed an increase in each section and reached a total of 500.

A special feature was the choice display of mountain plants, wall shrubs, Rhododendron species and plants suited for cultivation at the foot of warm walls, which came from the gardens at Dufferin Castle (gr. Mr. Harrison). Some 400 species were represented, including Aciphylla squarrosa, Cyananthus incanus leiocalyx, Helichrysum frigidum, Ophiopogon kansuensis, Ramondia pyrenaica rosea, a particularly fine coloured form; Raoulia australis, Rhododendron orbiculare, from China; Saxifraga hybrida Gem, S. Myra, pink and cherry-red respectively; and S. uniflora grandiflora. Of shrubs, some of the more interesting were Mutisia decurrens, Davidia involucrata, Embothrium coccineum, Nandina domestica, and Fremontia californica. Great care was taken in the system of labelling, and the exhibit called forth general admiration.

Competition in the classes for cut flowers was very keen, and the quality, despite the unfavourable weather, was quite up to the average of recent years. Sweet Peas filled the greater part of a table and made a fine display of colour. The first prize for twelve varieties was won by Mr. J. Kennedy, Aberfeldy. In the class for twenty-four Rose blooms, Mr. David Powrie, an Aberdeen amateur, defeated Messrs. D. and W. Croll, Dundee, and Messrs. Thomas Smith and Sons, Stranraer.

Mr. J. McGregor, Kinfauns Castle, won fifteen first prizes in the fruit section. His collection was of high quality, and consisted of Peach Royal George, Apple The Queen, Nectarine Pitmaston Orange, Brown Turkey Figs, Doyenné du Comice Pears, Melon Emerald Gem, Grapes Black Hamburgh and Muscat of Alexandria.

Vegetables were shown finely, and competition was particularly keen in the classes for collections, the Victory Cup offered for a collection of vegetables staged by horticultural societies in Perthshire was won by the Almond Valley Horticultural Society with 44 points, Aberfeldy Society being second with 35½ points.

The Perthshire Bee Keepers' Association put up a fine display of honey, and although the season has been unfavourable, the exhibits were of a high standard of excellence.

The principal trade exhibitors were Messrs. Alexander and Brown, Perth; Messrs. Thomas Smith and Sons, Stranraer; and Mr. R. Lawrie, Carnwyth.

GENERAL BULB GROWERS' OF HAARLEM.

The floral committees of the above society have made the following awards to herbaceous plants at meetings from May 26 till July 14.

First Class Certificates.

Delphinium Dina, a single, unicoloured, sky-blue variety with white eye.

Iris (*Holl.*) *David Bles*, this deep blue variety has pearl blue falls in the centre with small yellow spot. It is an exceedingly robust plant with big flowers.

I. (*hispanica*) *Golden Lion*, a dark yellow variety; the falls and standards are elegantly waved.

Ixiolirion Ledibouri, a dark blue variety blooming a fortnight earlier than others and with shorter petals.

Pyrethrum hybrida Eileen May Robinson, a variety with large pure pink, single flowers.

Awards of Merit.

Delphinium Empress Queen; the semi-double flowers of this variety are mauve with blue colour and developed on a large spike.

D. Hortulanus E. Th. Witte; the colour is mauve with a white eye on a base of sky-blue.

D. Ivorine; the flowers are ivory-white passing to soft sulphur-yellow, and with a soft yellow eye.

D. King George V.; the colour is violet on a dark blue base, with a small black eye.

D. Toeth-ank-amen; the flowers are mauve on a blue base and with a white eye.

D. Princess Elisabeth, a light violet variety with a white eye.

Iris Heemskerk, a golden-yellow variety, the standards passing into sulphur-yellow.

I. Josselin de Jong; the standards are white, the falls golden-yellow with an orange coloured blot.

I. Goldcrest (*pallida*), a deep-blue pallida variety, with striking yellow beard.

I. Lucia (*Regelio cyclus*); this variety is violet-red, with a prominent blue beard.

Lupinus polyphyllus Pink Pearls; the colour is warm salmon-pink.

L. polyphyllus Tunic; this soft-pink, long-stemmed variety is considered to be an improvement on L. p. Princess Juliana.

Pyrethrum, Dr. Bosch, a salmon-rose variety with long stems and free flowering.

Sedum elegans; the leaves are grey with brown shades. It resembles Sedum reflexum, S. aureum and others.

Tritonia crocata Hogarth, a variety of soft "Isabella" colour.

T. crocata Le Printemps, a fine orange-coloured variety.

T. crocata Nectar; this variety is cream-coloured, shaded pink.

T. crocata Rosalie, a bright orange-red variety.

ROYAL HORTICULTURAL.

Trial of Cos Lettuces.

The following awards have been made to Cos Lettuce (Spring sown), by the Royal Horticultural Society, after trial at Wisley.

Awards of Merit.

Semi-Cos Varieties.—Madrid Green and Madrilene (identical), both sent by Messrs. Barr and Sons. *Cos Varieties.—Giant White*, sent by Messrs. J. Carter and Co.; *Paris White*, sent by Messrs. R. Veitch and Son, Mr. A. Dawkins, Messrs. W. Atlee Burpee and Co., Messrs. Dobbie and Co., Mr. Cullen, and Messrs. Nutting and Sons respectively; *Paris White re-selected*, sent by Messrs. J. Carter and Co.; *Giant Paris White*, sent by Messrs. Robert Sydenham, Ltd., *White Improved*, sent by Messrs. Harrison and Sons; *Superb White*, sent by Messrs. Sutton and Sons; *Superb Champion White*, sent by Messrs. Dicksons, Ltd.; *Alexandra White*, sent by Messrs. Dobbie and Co.; *Trianon Early White*, sent by Messrs. Alex. Dickson and Sons; *Summer White* (*Trianon*), sent by Mr. W. H. Simpson. The whole of these last fourteen varieties were much alike.

Highly Commended.

Semi-Cos Varieties.—Ne Plus Ultra, sent by Mr. J. L. Clucas; *Little Gem or Sucrive*, sent by Mr. A. Dawkins; *Sucrive*, sent by Messrs. Nutting and Sons; *Gem*, sent by Messrs. Harrison and Sons; *Dwarf Gem*, sent by Messrs. Dicksons, Ltd.; *Little Queen*, sent by Messrs. Ryder and Son, Ltd.; (sent as) *Winter Density*, sent by Messrs. Watkins and Simpson. These last six varieties were identical. *Cos Varieties.—All Heart*, sent by Messrs. Nutting; *White Heart*, sent by Messrs. Sutton and Sons; *Lobjoit's Green Cos*, sent by Messrs. Watson and Simpson and Messrs. Cooper, Taber and Co. These last three varieties were much alike. *Paris Green*, sent by Messrs. Nutting and Sons, Ltd.; *Dwarf Perfection*, sent by Messrs. Barr and Sons; *Green Provence* (*verte de Provence*), sent by Messrs. Vilmorin, Andrieux et Cie and Messrs. Barr and Sons; *Incomparable*, sent by Messrs. F. Dicks and Co.; *Nonpareil*, sent by Messrs. Dickson, Brown and Tait. These last two were alike. *Early French Market*, sent by Messrs. Barr and Sons; *Paris Market*, sent by Messrs. Alex. Dickson and Sons; *Dwarf White Heart*, sent by Messrs. W. Atlee Burpee. See also *Self-folding* (Commended). These last four were much alike. *St. Albans Gem*, sent by Messrs. Ryder and Son, Ltd.; *Moor Park* (*syn. Prince of Wales*), sent by Messrs. Barr and Sons; *Prince of Wales* sent by Messrs. Watkins and Simpson. These last two were alike. *Victoria White*, sent by Messrs. Dicksons, Ltd.

Commended.

Self-folding, sent by Messrs. Clibrans; *Kingsholme*, sent by Messrs. Hurst and Son; *Champion White*, sent by Messrs. Backhouse Nurseries; *The Barnum*, sent by Messrs. Barr and Sons; *Mammoth Cos*, sent by Messrs. R. Veitch and Son; *Mammoth White Cos*, sent by Messrs. Hurst and Sons and Mr. A. Dawkins; *Balloon Cos*, sent by Messrs. Alex. Dickson and Sons and Messrs. Thos. Cullen; *Exhibition Cos*, sent by Messrs. Ed. Webb and Sons, Ltd.; *Dreadnought*, sent by Messrs. Daniels Bros., Ltd.; *Giant Summer*, sent by Messrs. Harrison and Sons, Ltd.; *Stirling White*, sent by Messrs. W. Drummond and Sons, Ltd; *Blanchland White*, sent by Mr. S. Finney.

BANGOR HORTICULTURAL.

The second annual show promoted by the Bangor Horticultural Society, Co. Down, was held in the Castle grounds on the 20th ult. Trade exhibits were numerous and very attractive and Gold Medals were awarded to Mr. W. Slinger, Donard Nurseries, Newcastle, for hardy herbaceous plants, Roses, and shrubs; Messrs. W. Hamilton and Co., Belfast, for Sweet Peas and Carnations; Mr. S. Dickson, Dundonald, for Roses; Messrs. T. Smith and Son, Newry, for hardy flowers; Messrs. Alex. Dickson and Sons, Ltd., Belfast, for Roses and Carnations; and to Messrs. S. McGredy and Son, Portadown, for Roses.

In the amateur section the principal prizes were awarded as follows:—The M'Mullan Cup, for eighteen Roses, to Mr. W. J. Finlay, Belfast; The M'Dowell Cup, for twelve Roses, to Mr. J. A. Stewart, Strandtown; The Haddon Cup, for eighteen bunches of Sweet Peas, to Mrs. J. C. White, Craigavad; The Connor Cup, for twelve bunches of Sweet Peas, to Lady Clanmorris, Bangor Castle; The Moore Cup, for six vases of Sweet Peas, to Mrs. J. Milling, Comber; The Murray Cup, for six vases of Carnations, to Col. Sharman-Crawford, Crawfordsburn; The Ferguson Cup, for twelve bunches of hardy flowers, to Col. Sharman-Crawford; The J. P. Moore Cup, for a group of stove and greenhouse plants, to Mr. F. Workman, Cultra; The Turner Cup, for a collection of nine dishes of fruit, to Lady Clanmorris; and the Leigh Thomas Cup, for a collection of twelve distinct vegetables, to Col. Sharman-Crawford.

ANSWERS TO CORRESPONDENTS.

Cockchafers in Soil: *S. T.* The larvae of the Cockchafers are very difficult to get rid of. We advise you to practice deep summer cultivation, *i.e.*, a soil mulch of at least three inches should be obtained by surface cultivation, and to dress the soil with a mixture of naphthalene, one part, and soot, fifteen parts, a good handful of this being dusted over each square yard of soil and forked into the ground. The adult insects will now be found devouring the leaves of various plants. They may be poisoned by spraying the plants that are found attacked with a solution of arsenate of lead, which may be abtained already prepared in paste form and should be mixed according to directions supplied therewith.

Distorted Apple Leaves: *W. H. B.* The damage to the Apple foliage is caused by the rosy Apple aphis, A. malifoliae. The trees should be sprayed in early spring with a solution of soft soap and nicotine made by dissolving 1½ ozs. of soft soap in a gallon of water and adding 1 oz. of nicotine (98% purity) to twenty gallons of the soapy wash.

Grapes Discoloured and Cracking: *R. K.* From the specimen of Grapes sent, we suspect that the cause of the berries turning brown is due to the insecticide having been used at too great a strength. The cracking, however, suggests that too much water has been applied to the roots of the vines or that there has been a severe reduction of lateral growth at one time.

Grapes Unsatisfactory: *J. B.* Where mildew has gone unchecked in a vinery for some years it is much more difficult to eradicate. There is no necessity for you to lift and transplant your vines again; remove all the loose surface soil when top dressing in the winter. Pay more careful attention to the cleansing of the house and vines during the winter months. Wash the vines when dormant at least twice with Gishurst compound or soft soap and sulphur, also wash the walls and similar surfaces with hot lime-wash and sulphur mixed. Keep a sharp look-out for the first speck of mildew in the spring and syringe carefully with a little soft soap and sulphur or with one of the mildew specifics advertised in the *Gard. Chron.*, spraying the bunches with clean soft soap water afterwards. It is difficult to keep vines clean and in good health when the house is more or less closed all the winter for the sake of other plants.

Mulberry Fruits not Ripening: *A. G.* We do not think that the grass growing close up to the stem of your Mulberry tree is the cause of the fruits failing to ripen. The Mulberry succeeds in almost any good garden soil, but it prefers a deep, fairly light soil, and a somewhat favoured situation to finish its fruits perfectly. Trees growing in a heavy and possibly a wet subsoil, would in such a cold, sunless summer as this one be liable to drop their fruits before the latter were fully ripened. A top dressing of light soil might improve matters, but old trees resent disturbance at the roots as the latter are thick and fleshy and should not be severed.

Nectarine Fruits Dropping: *B. R. W.* The dropping of the Nectarine fruits is probably due to drought at the roots during the latter part of last season. It is essential to see that the soil does not dry out, and if the weather is rainless artificial waterings must be given, taking care to thoroughly soak the border.

Statice latifolia Diseased: *H. G. D.* No parasite was present on the portions of plant received. It looks as though there is something wrong with the root or soil conditions of the particular plants affected.

Substitute for Farmyard Manure: *G. F.* As a substitute for farmyard manure we should advise you to use Adco Accelerator, a proprietary article, which, when added to garden refuse such as leaves, lawn mowings, etc., makes a useful organic fertilizer equal in value to farmyard manure. There is a pamphlet dealing with this subject entitled "A Garden Substitute for Farmyard Manure," which may be obtained from our Publishing Department, 5, Tavistock Street, Covent Garden, W.C., 2, price 6½d., post free. Basic slag contains phosphates only and for flower and vegetable cultivation you would find Clay's Fertilizer or some other approved complete manure the best to use.

Sweet Pea Fasciated: *H. G.* When Sweet Peas are grown particularly well and especially when the season suits them, it is no uncommon thing to find a few fasciated flower stems somewhat similar to the seven-flowered spike of Hercules you sent us. There is no particular beauty about a spike of this sort, although, of course, it is interesting.

Communications Received.—A. C. W.—H.—E. W. H.—A. M. D.—E. L. B.—J. L.—W. C.

SCHEDULES RECEIVED.

Kingston, Surbiton, The Dittons and District Chrysanthemum Society.—Seventeenth annual exhibition to be held in the Assembly Rooms, Surbiton, on Wednesday, November 12, 1924.—Secretary, Mr. W. H. Divers, Westdean, Hook, near Surbiton.

CATALOGUES RECEIVED.

Bulbs.

Cooper, Taber and Co., Ltd., 90, Southwark Street, London, S.E.1. (Wholesale).
Barr and Sons, 11, King Street, Covent Garden, W.C.2.
Sir James W. Mackey, Ltd., 23, Upper O'Connell Street, Dublin.
Dobbie and Co., Edinburgh.
D. G. Purdie, Glasgow.
E. Webb and Sons (Stourbridge), Ltd., Wordsley, Stourbridge.
Dicksons Seeds Ltd., Chester.
Morle and Co., Ltd., 150, Finchley Road, N.W.
Upstones, 35, Church Street, Rotherham.
Dickson, Brown and Tait, 57, Cross Street, Manchester.
Austin and McAslan, Glasgow.
Robert Veitch and Son, 54, High Street, Exeter.
D. S. Thomson and Sons, The Nurseries, Wimbledon.
Kent and Bryden, Ltd., Darlington.
McHattie and Co., Chester.

Chaplin Bros., Paul's Royal Nurseries, Waltham Cross.—Roses, fruit trees, etc.
Barr and Sons, 11, King Street, Covent Garden, W.C.2.—Irises.
Samuel McGredy and Son, Royal Nurseries, Portadown, Ireland.—Fruit, etc.; Roses.
James Macdonald, Harpenden, Hertfordshire.—Grass cultivation.
F. Gifford, Montague Nursery, Hornchurch Essex.—Single Paeonies Delphiniums.

THE
Gardeners' Chronicle

No. 1968—*SATURDAY, SEPT.* 13, 1924.

CONTENTS.

Annuals for greenhouse and conservatory decoration 184
Apples, stocks for ... 176
Bedding schemes, tall plants in 186
Books, notices of—
  The Cactaceae ... 180
Bulb Garden—
  Iris gracilipes ... 179
  Lilium giganteum ... 179
Carrot's crimson eye, the 186
Cassia corymbosa ... 186
Flower shows, judging artistic exhibits at ... 181
French Chrysanthemum Society 176
Fruit garden—
  Autumn watering of fruit tree borders ... 186
Fruit garden, the market 182
"Gardeners' Chronicle" seventy-five years ago 177
Harris Mr. Charles ... 176
Imperial Botanical Conference 185
Melchet Court, the big Vine at 175
Nursery notes—
  Dobbie and Co., Marks Tey 184
Paris Chrysanthemum Committee 176
Plants new or noteworthy—
  Davidia Vilmoriniana 183
Societies—
  Dundee Horticultural 190
  Glasgow and West of Scotland 186
  National Hardy Plant 190
  Royal Horticultural 188
Trees and Shrubs—
  Berberidopsis corallina 184
Trial Grounds for the north 176
Week's Work, the ... 178
Wisley, notes from ... 183

ILLUSTRATIONS.

Davidia Vilmoriniana, fruiting branch of 183
Harris, Mr. Charles, portrait of 176
Iris gracilipes 181
Lilium giganteum at Merton Hall, Norfolk 179
Rose Columbia... 177
Southport Floral Fete: Messrs. Dickson & Robinson's prize collection of Dahlias at 185

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 55·8.

ACTUAL TEMPERATURE:—

Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 10, 10 a.m.: Bar. 29·8: temp. 61°. Weather, Dull.

The Dahlia.

MUCH has been written on the development of the Dahlia, but there is always room for further contributions when they come from the pen of such experts as Mr. Ernest H. Krelage, of Haarlem. In his address on the Development of the Dahlia[*] Mr. Krelage accepts the date of 1798 assigned by Mr. C. Harman Payne as that of the introduction of the Dahlia into Europe. He holds, moreover—and as we think, rightly—that in view of the immediate variability of the plant after its introduction, the plants brought from Mexico included cultivated kinds, and that the Dahlia had probably been cultivated in Mexico long before the day of its introduction into Europe. The first plants raised appear to have been grown in Germany from seed sent in 1803 by H. von Humboldt. In 1855 the Leipzic Court gardener already had fifty-five varieties, doubles and semi-doubles. The first mention of a perfect double is in 1808. By this time the cult of the Dahlia had spread to Belgium, and the Director of the Liege Botanic Garden produced in three generations from seed flowers of many colours, semi-doubles and two doubles. These plants were distributed in Paris and in London. Later Holland joined the cult and added to the novelties. The art of propagation from cuttings was discovered and practised. After the peace of 1814, which brought the Napoleonic wars to a conclusion or all but to a conclusion—Dahlia growing became widespread in England. Dwarf forms which had been already raised in other countries appeared here and became popular. New varieties sold for from ten shillings to five pounds, and some growers became wealthy by specialising in this flower. The day of the Show Dahlia had dawned, and in the *Transactions* of the Royal Horticultural Society for 1828 the "points" of the Show Dahlia are stated by William Smith. The Anemone-flowered Dahlia appeared in 1830, by which time the varieties had come to number at least one thousand five hundred, and still they came, so that in 1831 there were no fewer than twelve hundred and twelve doubles—truly *un embarass de richesse*. It was at this time that a blue Dahlia was so ardently sought for—but never found. Prizes were offered, The Caledonian Society of Edinburgh, throwing thrift to the winds, offered £1,000, and the Irish, regardless of all such considerations, offered £2,000. Henry Cannell's blue Cactus Dahlia introduced later was the nearest approach to blueness, and, for all we know, the prize is still open. The star of the Dahlia appeared to be setting after the last century had run nearly half its course, and fashion was disposed to look elsewhere for floral attractions. Even the Lilliput or Pompons, introduced in 1851, could not win back the full favour of the world at large, and had to wait until recent times for a large measure of popularity. Towards the end of the nineteenth century the single Dahlia, which had been ousted from notice by its big relations, came into popular favour, and a few years before this event—in 1872—the Cactus Dahlia arrived from Mexico. It was no use; nobody took any notice. It went to Holland, to France. The French were as indifferent as the Dutch. Ultimately it reached Messrs. Cannell, and shown in 1879 made a well-deserved sensation. From 1890 the Cactus Dahlia enjoyed popularity, and much of it was due to the skill and energy of British growers. Paeony Dahlias, raised about 1900, met with a cold reception in England from the connoisseur, but the public had other views and bought the novelties readily, and Paeony and Decorative Dahlias have kept the popular favour. Collerettes arose about the same time. Among the most recent additions to the increasing variety are the new Star single and the Clematis-flowered Dahlias. Though the day of the Show Dahlia may have gone, its successors have maintained themselves in popular favour, and to-day the Dahlia is well established as a great garden plant capable of adapting itself to the most fastidious taste and of growing to such accommodating size that even the smallest garden may find a place for it.

Eelworm Disease of Phloxes.

FOR many years past it has been known that the varieties of Phlox decussata and P. suffruticosa have been troubled with an eelworm disease which has rendered the cultivation of this important garden plant very difficult and in some gardens impossible. Mr. G. F. Wilson, N.D.H., has for the past year or two had this particular disease under his observation and in the *Journal* of the Royal Horticultural Society, Vol. XLIX, Part 2, he contributes a very interesting and instructive paper on the subject. The eelworm, Tylenchus devastatrix, has many plant victims—Potatos, Onions, Oats and Wheat among important foodstuffs, while Narcissi, Hyacinths, as well as Phloxes, are some of our most attractive flowering plants which fall a ready prey to this obnoxious pest. Tylenchus devastatrix is purely a stem and leaf invader and the symptoms of eelworm attack in Phloxes are varied. The affected leaves are often narrow, waved and crinkled, the stems may be elongated and soft, or if the disease is more severe the growth is stunted and the stems show cracks and fissures. Other symptoms include the proliferation of basal buds and the separation of the epidermis from the leaf tissue. Mr. Wilson gives an excellent review of the life history of the eelworm and has found, amongst Phloxes, that there is marked varietal susceptibility to attack. For instance, George A. Ströhlein, Le Mahdi and Rijnstroom are very susceptible; Elizabeth Campell, Maspero, and Rosamundi show a marked resistance, and Antonin Mercié and Widar are most resistant to attack. While it was an easy matter to infect Phloxes by direct inoculation by potting healthy plants in eelworm infected soil and even by watering plants with water containing eelworms, Mr. Wilson failed to get cross infection directly on to Onions, Narcissi, Campanula persicifolia, etc., thereby upholding once more the biological strain theory put forward by that old and famous authority on nematodes, Dr. Ritzema Bos. The Sweet William, strangely enough, does not resent attack when subjected to a watering with "Phlox eelworm." Under the heading of the "Avoidance of the Disease," Mr. Wilson emphasises the necessity for clean, eelworm-free soil and clean, healthy plants. There is no known means, as yet, of ridding soil of eelworms in the open ground; consequently, infected ground must be avoided and the land given a rest from Phloxes and Sweet Williams for a number of years. Mr. Wilson states seven years as the "starvation period," but no doubt after further experiments he may be inclined to reduce this period. It is advised in the propagation of the plant to use healthy cuttings rooted in eelworm-free soil; root cuttings from diseased plants may be safely employed provided the roots are washed free from soil and the cuttings raised in clean soil. The paper is very well illustrated and the reproductions show diseased plants in many stages of attack.

National Dahlia Society's Show.—The National Dahlia Society's Annual Show was held in the Royal Horticultural Hall, Vincent Square, Westminster, on Wednesday, the 10th inst., and the Society is to be congratulated on the magnificence of the exhibition. The hall was well filled with many pleasing trade groups and the competitive classes attracted keen and spirited competition. The exhibition was graciously opened by H.R.H. Princess Louise, Duchess of Argyll, and the attendance throughout the day was very good. The report of the show will appear in our next issue.

The Big Vine at Melchet Court.—At Melchet Court, Romsey, Hampshire, the country seat of Sir Alfred and Lady Mond, there is a large and old Black Hamburgh Grape vine, which entirely fills one vinery one hundred and sixteen feet long, eighteen feet wide, and fifteen feet six inches high. The vine is supposed to be one hundred and eighty years old, the main stem has a girth of thirty-seven inches, and there are over three hundred feet run of permanent rod. This year's crop consists of four hundred and thirty-six bunches, which average one-and-three-quarter pound per bunch. Notwithstanding its age, the vine produces excellent Grapes, which possess the intense black colour that is always evidence of fine quality. Some bunches shown at the recent Romsey show weighed three pounds each.

---

[*] Report of International Horticultural Congress, Amsterdam, 1923.

Golden Wedding of Mr. and Mrs. Alfred Watkins.—An interesting event was celebrated on Tuesday last, September 9, at the Connaught Rooms—the golden wedding of Mr. and Mrs. Alfred Watkins. Mr. Watkins was the founder and governing director of Messrs. Watkin and Simpson, Ltd., Drury Lane. Many personal friends of long standing were present at the reception, including his two co-directors, Mr. J. M. Bridgeford and Mr. A. H. Howard and their wives, Mr. and Mrs. Wm. Poupart, Mr. and Mrs. John Poupart, Mr. and Mrs. Geo. Monro, Mr. and Mrs. B. Monro, Major and Mrs. E. Monro, and Mr. and Mrs. A. J. Monro. After the reception a luncheon was served. The golden floral decorations were most elegantly carried out by Mr. Harry Miles. Miss Jean Stirling Mackinlay and her brother entertained the company during the afternoon from their very artistic and unique repertoire.

The John Snell Memorial Medal.—The National Institute of Botany has awarded the John Snell Memorial Medal to Professor H. M. Quanjer, Wageningen, Holland, for his research in regard to the virus diseases of Potatos.

Royal Botanic Garden, Calcutta.—From the recently issued report we learn that no fewer than 25,000 plants were distributed from the Royal Botanic Garden, Calcutta, during the year 1923-4. Of this number 9,450 were trees for roadside and similar planting, 6,900 were shrubs, and about 7,000 were Palms and surplus annuals. As usual the distribution was to Government Institutions, District Boards, railways and municipalities. In addition to plants, 200 packets and 40 lbs. of seeds were distributed to various gardens, scientific departments and private individuals throughout the world. Over 2,400 plants, mostly Orchids and bulbs were received, but unfortunately the annual supply of Mahogany seeds from the West Indies did not reach Calcutta in germinable condition. During the period covered by the report two magnificent specimens of the Mahogany tree went from the Gardens to the timber section of the British Empire Exhibition. These specimens date from the early history of the Garden, the annual rings of one specimen proving it to be well over a hundred years old. Visitors from Bengal to Wembley will thus have an opportunity of viewing a product, unequalled in its way, which has taken their province over a century to produce.

The Foremarke Challenge Cup for Gladioli.—The open competition for the Foremarke Challenge Cup, which was held in conjunction with the Royal Horticultural Society's fortnightly meeting on Tuesday last attracted no fewer than five entries. The Challenge Cup, which was presented to the Society by Sir Francis Burdett, Bart., is offered for the best display of twenty spikes of named Gladioli, in not fewer than ten varieties, and not more than two spikes of any one variety. The winner was Mr. W. Whitlaw, Station House, Laurencekirk, Kincardine, Scotland, and he is to be congratulated upon the magnificence of his exhibit. Mr. Whitlaw, we believe, is the stationmaster at Laurencekirk, and although his flowers had travelled five hundred miles they were in perfect condition. The spikes were of mammoth size, and some of them had so many as fifteen fully developed blooms. Amongst the varieties exhibited were Apricot, bright salmon-pink; Janet Mair, salmon; Beatrice, rich pink with white blotches; Vedrines, scarlet; Sparkler, a beautiful shade of rose-purple with white blotches; White Lady, white; Princess Mary, pale blush; and Charles Bertier, rose. In addition to winning the Challenge Cup, the Council presented Mr. Whitlaw with the Silver Lindley Medal to mark its appreciation of the high quality of the exhibit. Messrs. W. Artindale and Son, Sheffield, also had a noteworthy collection which was placed second, while the exhibits from Major G. Churcher, Lindfield, Sussex, and Messrs. Lowe and Gibson, Crawley Down, Sussex, were judged equal third.

Mr. Charles Harris.—Mr. Charles Harris, whose portrait we have pleasure in reproducing this week, comes of an old gardening family, and commenced his horticultural career under the guidance of his father, who was then in charge of the Hammerwood Gardens, East Grinstead. Leaving East Grinstead to go to The Frogmore Gardens, Windsor, Mr. Harris had ample opportunities of studying horticulture in its many branches, for he served three years in the plant department there, and then, for a brief period, was engaged in the fruit department at Eaton Hall Gardens, Chester. Moving thence to take up a foremanship in Sir Henry Tate's garden at Streatham Hill, where he was employed for four years, he afterwards took an appointment as head gardener and land steward to the Earl of Clarendon at The Grove, Watford, a position which he held for sixteen years. Five years ago he secured his present post, that of head gardener to the Duke of Portland at Welbeck. Although the kitchen and fruit gardens are now things apart at Welbeck, Mr. Harris has more than two hundred acres of flower gardens and pleasure grounds under his care, and high praise is due to him for the commendable work he has performed in restoring this vast garden to its pre-war beauty. He possesses an enviable knowledge of trees and shrubs and flowering plants, and his artistic skill enables him to obtain most beautiful effects even from the simplest of flower groupings. He is a skilled grower and makes a hobby of the cultivation of single Violets.

MR. CHARLES HARRIS.

French Chrysanthemum Society.—The twenty-fourth Annual Conference of this Society will be held at Rennes on November 5 to November 8 next. An International Exhibition will be organised by the two horticultural societies of the Department. The programme, subject to further additions if necessary, will comprise papers and discussions on Soils and Composts for Potting; Sports and the Means by which Priority can be obtained by the Raisers by International agreement; Diseases and Parasites; Is it necessary to change the Soil for Chrysanthemums Grown in the Open and, if so, to what Extent? The proceedings have been arranged as follow: November 4: Reception at the Town Hall by the Mayor. November 5: Operations of the Jury and Floral Committee, followed by the usual luncheon. At 2 p.m., the official opening of the Show; at 3 p.m., first meeting of the Conference. November 6: Meeting of the General Committee; second meeting of the Conference; visit to the Law Courts; then the Official Banquet, followed by a lantern lecture by Professor Daniel of the University of Rennes. In the evening a gala performance at the Municipal Theatre. November 7: Excursion to Mont St. Michel, returning *via* St. Malo. November 8. Horticultural lectures concluded; visit to the horticultural sights of Rennes. Altogether an interesting and attractive programme which, if the weather be at all favourable, will be much enjoyed by those fortunate enough to be able to avail themselves of the opportunity. We have just received from one of the Society's Swiss members, M. R. Fraigneux, a well-printed little pamphlet of thirty-two pages in a stiff wrapper entitled *The Commercial Cultivation of the large-flowering Chrysanthemum.* There is a preface by the Society's Secretary, M. Philippe Rivoire, and several selections of varieties suitable for cut blooms and pot plants for market purposes. We do not recall any previous attempt on the part of a Swiss writer to embody his experience in an independent pamphlet on Chrysanthemum culture. The membership of the Society now amounts to 1230, including sixty-one affiliated societies. M. Charvet of Angers is the newly elected President.

Legacy to a Gardener.—The late Col. Percy Hargreaves, Chairman of Messrs. Hick, Hargreaves and Co., Ltd., Bolton, whose estate is valued at £88,016, has left the sum of £100 to his gardener, Mr. A. Sage.

Trials Grounds for the North.—The subject of instituting trials grounds for the north as complementary to the trials held at Wisley, has been exercising the minds of northern horticulturists for some time past. Several sites have been suggested in the north of England and in the south of Scotland, and possibly some decision may be arrived at regarding the best centre on the occasion of the meeting which is to be held at Harrogate on September 17. At the conclusion of its general business during the afternoon of the first day of the show at the Winter Gardens, the North of England Horticultural Society has arranged for a discussion on this subject, which is to be opened by Mr. Robert Fife, President of the Royal Caledonian Horticultural Society. Mr. Fife has in hand the correspondence of the five societies concerned: viz., the Royal Horticultural Society, the Royal Horticultural Society of Aberdeen, the Royal Caledonian Horticultural Society, the Glasgow and West of Scotland Horticultural Society, and the North of England Horticultural Society. The Rev. J. Bernard Hall informs us that he will report on the encouragement received with regard to the establishment of a trials ground at Harrogate for the purpose of specialising in floriculture, e. g., Roses, Chrysanthemums, alpines, bulbs, etc. In his opinion, Harrogate is a most suitable centre for a training school (preparatory to Wisley and Kew) for the north of England, but doubtless many other opinions will be expressed at the meeting.

Stocks for Apples.—Mr. R. G. Hatton, M.A., Director of the East Malling Research Station, will deliver a lecture on "Stocks for Apples," illustrated by lantern slides, at 4.30 p.m. on Wednesday, September 17, at the Winter Gardens, Harrogate, in connection with the meeting and show of the North of England Horticultural Society.

Paris Chrysanthemum Committee.—The report for the past year of this Committee's work appears in the current number of the *Journal* of the National Horticultural Society of France. It appears that the meetings were well attended and the exhibits staged were numerous and of great interest. Out of the novelties submitted forty-eight were awarded a Certificate of Merit—the exhibitors being M. M. Vilmorin, Andrieux and Co., Mme.

Martin and Son, MM. Morin, Féron, Laveau, Lochot, Vangreveninghe, Guilloiseau, Férard and the Paris Municipal Garden. The autumn Exhibition was a great success. The Committee made a collective exhibit at the Exhibition at Limoges, no fewer than fifteen members contributing to it. The group was exhibited *hors concours* and was greatly admired, M. G. Clement being in charge. The following decorations have been awarded to members of the Committee, viz., M. Decault, who has been made a Knight of the Legion of Honour; The President, M. Lionnet, and Mr. Harman Payne, both Commanders of the Mérite Agricole; M. Lhuile, Officer, and M. Quintard, Chevalier of the same Order.

Appointments for the Ensuing Week.—Tuesday, September 16: Croydon and District Horticultural Society's meeting; Winchester Horticultural Society's lecture. Wednesday, September 17: North of England Horticultural Society's show (3 days); Cardiff Flower show; Morley and District Paxton Society's meeting. Friday, September 19: Eastbourne Horticultural Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Times and Seasons for all Things.*—On going to the show of the Royal South London Floricultural Society, at the Surrey Zoological Gardens, on Wednesday last, I was much struck with the altered appearance of the company, compared with what I have seen at former shows, not only as regards the number of the visitors, but the character of the individuals; it is true the day was most unpropitious, and that would account for the absence of many of the fair visitants who usually honour the gardens on such occasions; but what struck me most forcibly was the number of persons with cigars in their mouths, and, in some few instances, clay pipes; go where you would, you were met at every turn with a whiff from a cigar, and some not of the finest flavour—in fact, it was a general fumigation. Now, I do think such a practice, in such a place, most abominable; if visitors were permitted to smoke at all in the gardens, which I think ought not to be allowed, surely they ought to keep out of the tents—where the ladies are examining the flowers and desirous of inhaling their perfumes—but no; I have seen ladies turn away in disgust, being willing to forego the pleasure of admiring the exhibition rather than undergo the ordeal of being surrounded by two or three men, who were blowing their cloud, as they would term it, just under their noses, and who, if spoken to, would treat the matter with the greatest possible levity. Surely the authorities might prevent this practice; for there can be no difficulty in showing those persons they are acting contrary to their best interests, in keeping away the visitors, who might become their supporters, if allowed to see and admire the effects of their labours. We do not expect to see the most refined manners in gardeners, but we do expect to see them pay some little respect to the society they mix with on such occasions, who would not fail to admire and appreciate their productions, if allowed to do so, undisturbed by tobacco smoke.—*A Visitor.* [We entirely concur in the remarks of our correspondent. If the proprietor neither can nor will prevent such offensive practices, the evil will work its own cure; for no person of respectability will visit such a place.—Eds.] *Gard. Chron.*, *September* 15, 1849.

Publications Received.—*Handbook of the British Flora.* By Bentham and Hooker. Seventh Edition, revised by Dr. A. B. Rendle. L. Reeve and Co., Ltd., 6, Henrietta Street, W.C. 2. Price 12s. net. *Soil and Crops.* By John H. Gehrs. Macmillan and Co., Ltd., St. Martin Street, W.C. Price 6s. 6d. net. *Colour Planning of the Garden.* By George F. Tinley, Thomas Humphreys, and Walter Irving. T. C. and E. C. Jack, Ltd. 35, Paternoster Row, E.C. Price £2 2s. net.

THE ROSE GARDEN.

ROSE BETTY UPRICHARD.

This charming new Rose has been shown particularly well this year by its raisers as well as other growers. When Messrs. Alex. Dickson and Sons, of Newtownards, exhibited it at the summer show of the National Rose Society on June 29, 1921, it received a Gold Medal, and in July of the same year it received an Award of Merit from the Royal Horticultural Society at the Holland House Show. The colour of the blooms is difficult to describe, but probably the dominant shade is carmine, and this is shaded with salmon on the inside of the petals; there is a suffusion of orange at the petal bases and a delightful sheen over the whole bloom. Apart from its attractive colouring and its fragrance, the variety is of considerable merit as a garden Rose, seeing that it is exceptionally vigorous. This year it has flowered practically continuously through what has been a wet, cool season, and after flowering all through the summer, it now carries beautiful flowers, four or five together, on the erect and sturdy growths which the moist weather has encouraged. My plants will evidently continue to bloom until cold weather sets in. *C. K.*

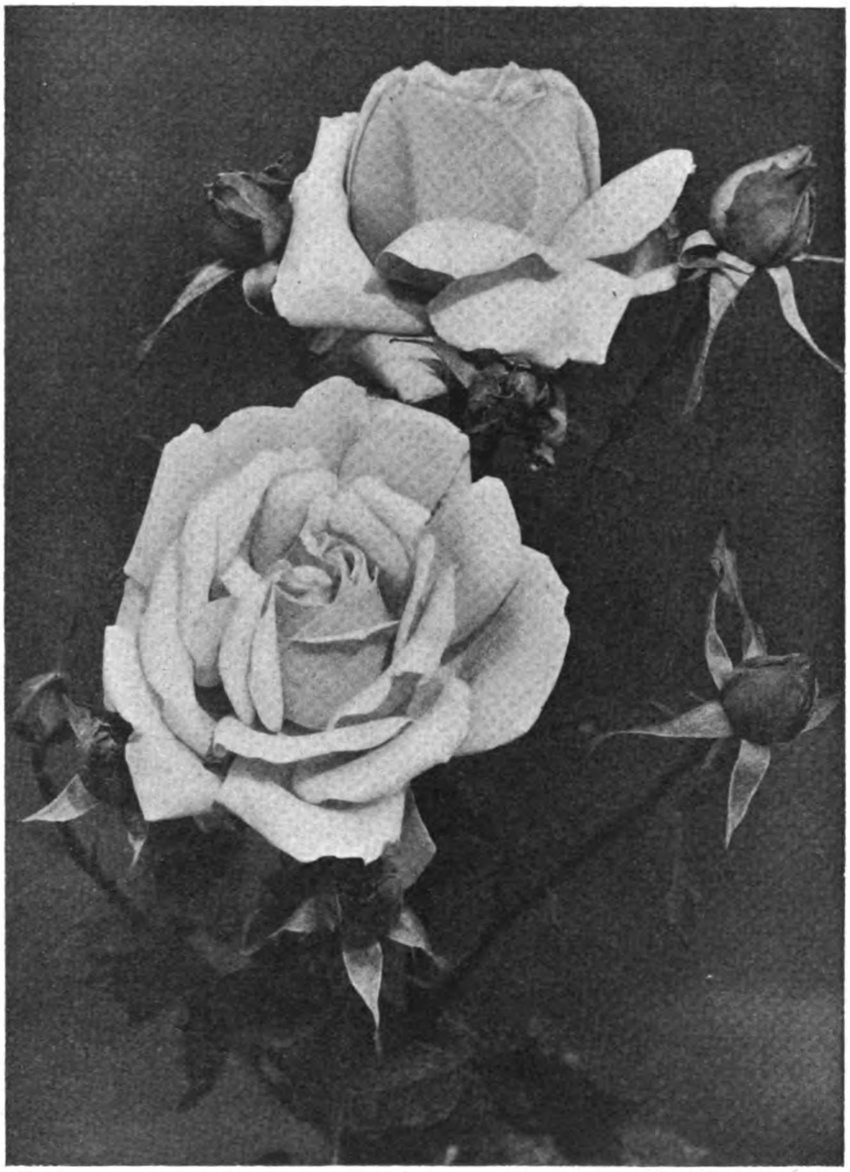


FIG. 66.—ROSE COLUMBIA.

ROSE COLUMBIA.

This fine and sweetly-scented Rose (Fig. 66) has large flowers of a deep china-pink colour and has already proved to be a vigorous grower in this country and sufficiently free-flowering to warrant a position among a list of good garden Roses. The blooms are sufficiently large and full to render them suitable for exhibition purposes, and when the variety is grown under glass it has long stems and thus becomes eminently suitable for the market.

It was raised by Messrs. E. G. Hill, in 1919, and therefore is one of the varieties for which we are indebted to America, where it has had a good run of popularity among cultivators of Roses for the production of flowers for market. It has also been grown to some extent by market growers in this country, but probably its popularity here will be due to its freedom of flowering, vigour of growth and delightful fragrance.

The Week's Work

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Odontoglossums and their Hybrids.—These useful, cool-growing plants are greatly appreciated by all lovers and growers of Orchids, O. crispum and O. Pescatorei being special favourites. Many finely coloured hybrids have been introduced during recent years, mainly through crossing and inter-crossing the above-named species with O. Harryanum, Cochlioda noetzliana, etc. Where a large collection of these plants is cultivated, there are at all seasons many plants in various stages of development, and some in bloom. Plants that flowered early in the year are making new growths, and young roots are developing freely from their bases. Although individual plants may be re-potted at almost any time of the year, late summer and early autumn are regarded as the best seasons for the general overhauling of the plants, and for giving fresh rooting material to those that require it; the moist atmospheric conditions and cooler nights are of great assistance to the re-establishment of the plants after root disturbance.

Pleurothallis and Restrepia.—Cool Orchids which thrive well under the same cultural conditions as the Masdevallias are the Pleurothallis, several of which are well worth growing on account of the curious structure of their flowers; mention may be made of P. Roezlii, P. picta, P. ornata, P. punctulata, and P. macroblepharis (the Gnat Orchid); Restrepias, Octomerias, Stelis and many others need similar conditions. When re-potting these plants the receptacles should be well drained and the potting materials may consist of chopped Osmunda-fibre and Sphagnum-moss in equal parts. Afford water very sparingly for a few weeks, and as the plants become re-established gradually increase the supply. Shade the plants from bright sunshine, and when applying water to the roots pour it round the inner edges of the receptacle.

Coelogyne cristata.—This Orchid and its varieties are making rapid growth, and established specimens need copious supplies of water at the roots whenever the compost becomes dry. An occasional watering with a weak solution of liquid cow manure will also be beneficial. Plants which have been re-potted recently should be watered rather sparingly until the new roots have become established in the compost. The surroundings of the plants should never be permitted to become dry. These conditions should be maintained until the pseudo-bulbs have matured and the flower scapes are developing, when the supply of water should be lessened gradually.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Rambler Roses.—The majority of the rambler Roses have finished flowering and the removal of unwanted wood ensures a better ripening of the young growths. No rule of thumb method can be followed in this pruning, for while some varieties throw abundance of strong, new growths from the base, others are very shy in this respect. In every case make the best use of the young growths, retaining only sufficient older wood to furnish the space which it is required to fill.

Anemones.—On light soils where they will withstand the winter safely, the tuberous-rooted Anemones, including the popular St. Brigid varieties, may be planted this month to flower in February. Subsequent successional plantings may be made at intervals during the winter and spring to prolong the period of flowering. The soil should be thoroughly prepared and well manured before planting. On very heavy soils it is better to defer planting until the spring, unless made-up beds of light soil can be prepared.

Herbaceous Borders.—Continue the tying of late-flowering plants as necessary and keep the surface of the borders free from weeds. Where it is intended to make new borders no time should be lost in preparing the sites, so that the ground may have time to settle before planting takes place next month. The ground should be thoroughly trenched to a depth of two feet, and have a liberal quantity of decaying organic matter incorporated with it during the process.

Climbers.—Encouraged by moist, sunless weather, many climbing plants have a tendency to make rampant growth. The training of new growth should not be neglected, but overcrowding should be guarded against, as the prevailing conditions promote soft wood which cannot ripen under crowded conditions.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Bulbs for the Cool Greenhouse.—Tritonias are very showy and useful plants for this purpose, and the brilliantly coloured variety, Prince of Orange, should be included. The bulbs should be potted in early autumn, and it is best to grow them in small, well-drained pots (not larger than five inches in diameter), in each of which should be placed nine or ten bulbs. A light, open, sandy soil should be used. The bulbs should be started in a cold frame and be given the coolest treatment right up to the flowering stage. Ixias also are well worth growing for the cold greenhouse, and require the same treatment as Tritonias. The bulbs are larger, however, and five or six of them in a 5-inch pot will be sufficient.

Violets in Frames.—Runners planted in outside borders last spring should have grown into good plants. These should now be lifted and transferred to their winter quarters, so that they may become well established before the short days set in. The frames or pits in which they are to be grown should be in a position to receive the maximum of light and sun while growers in the midlands and the north, who can afford space for the plants in bricked frames or pits, which are provided with a circuit of two-inch hot water pipes and good valves, will be fortunate. Recourse to gentle warmth should, however, only be had during spells of excessive damp or very frosty weather. Violets resent "coddling" but they suffer during winter from dampness and lack of sun, and at such times a gentle circulation of warmth through the pipes, with free ventilation, will help to counteract these evils. Where portable garden frames only are available, a good plan is to build a stack of rough wood (limbs from fallen trees, etc.) and faggots some three feet in depth and of sufficient dimensions to allow a three feet margin all round the set of frames required. On top of this may be placed a covering of long stable litter on which to bed the frames, but not in sufficient bulk to cause bottom heat. There is less risk of damping-off when this method is adopted than when the frames are placed upon a bed of litter only. Some of the best Violets the writer has seen produced were grown in this manner. The frames should be partly filled with good fresh soil in which some wood ash and soot have been included. This should be trodden firmly before planting is done. If at all dry at the roots the plants should receive a thorough watering a day before lifting them, and to avoid distressing them they should be lifted with good balls of soil adhering to their roots and placed intact in the prepared beds at the required distance apart. The space between the balls of earth and roots may then be filled in with more of the prepared soil, pressing it firmly about the roots. Take care not to plant too deeply. The plants may almost touch each other, but they should be as near the frame lights as possible, allowing just sufficient space for the free running of the lights over them. Water the beds very thoroughly after planting. Syringe the plants several times a day and if bright weather prevails afford a light shade for a few days to prevent flagging. The lights should not be used until cold weather sets in.

HARDY FRUIT GARDEN.

By R. W. THATCHER, Gardener to MARK FIRTH, Esq., Carlton Park, Market Harborough, Leicestershire.

Gathering Fruit.—All fruits are ripening fast and should be gathered so soon as they are ready. The best way to determine whether they are fit for harvesting is to lift each fruit lightly, and if it parts readily from the tree it may be assumed that it is ready for gathering. Nearly all early and mid-season Apples are ready for picking in September or early in October, but late varieties should be left on the trees for as long as possible, otherwise they will shrivel when placed in the fruit room. The greatest possible care should be taken in gathering fruits that are intended for keeping, as the slightest bruise will cause them to go bad. Pears should be placed in baskets or trays on soft wood-wool, conveyed to the fruit room in single layers, and placed on the same material spread evenly on the shelves. Apples will take no harm if placed in shallow heaps, where room is a consideration, provided they are all sound when stored Small Nuts and Filberts may also be gathered when they part easily from the cups, and these are best stored in sand to keep them plump. Choice dessert Plums should be harvested as they ripen, and the trees may be examined every other day or so. Birds are sometimes very troublesome just when fruits are colouring, especially Apples and Pears. They peck a small piece out of each fruit close to the stalk, and where this occurs nets should be spread over the trees. Wasps have not been such a nuisance as I anticipated, no doubt owing to the wet and cool weather. Wasp nests in the vicinity of the garden should be destroyed as advised in a previous calendar. Fig trees on walls have made a lot of growth this season and superfluous shoots should be cut out and the others tied in if this has not already been done. The Fig requires a warm, sunny autumn, as in the case of Peaches and Nectarines, to ripen the fruiting wood. A few sunny days at this season greatly enhances the flavour and appearance of these fruits.

FRUITS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Late Melons.—Hasten the development of the fruits by closing the house early, with sun-heat and plenty of atmospheric moisture, but should the fruits be at the stage when the skins are netting, it will be wise to keep the atmosphere a little drier and use a little fire heat, to permit of a small amount of top ventilation at night, to prevent an excessive accumulation of moisture. The watering of the soil should be done carefully, especially where the ridges are on the large size. I am in favour of small borders for late Melons, planting closely and only allowing one or two fruits to each plant. Should the plants require assistance to help them to mature their crops, use for preference, liquid farmyard manure. Late Melons should not be grown to a large size, those of a medium size being preferable for table use; they will also keep longer after being cut and are generally a better flavour.

Melons in Frames.—Where Melons are growing in frames and the fruit is not yet ripe, extra care should be taken in watering the plants. The foliage should never be allowed to flag and sufficient water should be given the roots to prevent this; but at the same time the amount of water should be limited, or probably the fruits would crack badly and be deficient in flavour. To hasten the crop re-lining frames with fermenting material will prove a great assistance, and the frames should be covered with mats at night to conserve as much of the internal warmth as possible.

Storage of Loam.—Where it is intended to make new Vine or Peach borders, or prepare material for top dressing the same during the winter and spring, the present is a suitable time to obtain the necessary loam in sufficient quantities to meet the demand. Where good loam is obtainable on the estate, it should be cut into squares, stacked neatly, and protected from heavy rains. Arrange the soil in a heap in layers, adding sufficient old mortar rubble, ashes from the garden fire, and charcoal in each layer and in such quantities as are deemed necessary. The materials will become incorporated evenly when preparing the soil for use. The loam should be cut only when the weather is fine and stacked forthwith as the work proceeds.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Cauliflower.—To obtain a supply of heads in early spring seeds should be sown now in soil that is not excessively rich and in a position fully exposed to the sun. So soon as the seedlings are large enough to handle, transplant them into frames, three to four inches apart, or, if plenty of three-inch pots are available, pot them and grow on in a cool frame, giving them plenty of air on favourable occasions.

Spring Cabbage.—The earliest-sown plants are ready for transference to their permanent quarters. Transplant them in showery weather. The ground for this crop should contain plenty of manure, dug into it some considerable time previously. Well cultivate the soil before the plants are set out and select the sturdiest specimens, as soft, sappy plants, will not withstand the winter's frosts. Before planting, dress the ground with soot to keep slugs in check.

Caterpillars.—A sharp watch should be kept on the winter green crops for caterpillars, picking them off by hand. As a rule these pests get well into the hearts of the plants and spoil the latter in a few days.

Lettuce.—Sow seeds of Lettuce in boxes or in a cool frame to raise plants for spring planting. Select a black-seeded variety and grow the young plants as hardy as possible in a dry position through the winter months.

Radish, Mustard and Cress.—Sowings of Radish and Mustard and Cress should be made in boxes under glass to ensure quick growth. Sown in boxes and germinated quickly in heat, they may be transferred later to cooler quarters.

Late Sowings.—Late crops of Turnips, Beets, Carrots, &c., should receive attention. These crops should not be thinned too severely. A liberal sprinkling of soot along the lines and around the "bulbs" will act as a deterrent to slugs which have been favoured by the wet weather of the past few weeks.

BULB GARDEN.

IRIS GRACILIPES.

Now that the planting season is at hand, owners of rock gardens should not overlook the claims of Iris gracilipes (Fig. 68). Many dwarf Flag Irises seem anything but amenable to life in the rock garden. They may exist (too often they are ruined by slugs), but often do not flower profusely, and when they do their day is brief. But my experience of I. gracilipes is that it is as easy to cultivate as it is delightful. Small-rooted portions of the plant soon make a flowering clump which goes on blooming generously year after year and in the poorest of soils. It is just possible that a poor soil may be the reason of success, insuring thorough drainage and an equally thorough rest for the plant in autumn. At any rate we have had a rocky "pocket" filled with a congested mass of I. gracilipes for over ten years, and it flowers as well now as ever it did.

I. gracilipes is, moreover, quite hardy, and slugs scarcely ever attack it. It has pale yellowish-green, grassy foliage about four inches high, and just above this the flowers are held on elegantly arched stems, their season being early June. Farrer has described these exquisite little blossoms as "wide-winged delicate butterflies in the tenderest of crumpled silk of pale-blue, with beard and enrichments of gold and a pale veined eye." Nor can one question his opinion when he acclaims I. gracilipes as "the most perfectly fairy-like of its race." Dykes, in his monumental work *The Genus Iris*, p. 104, also writes in high praise of this species, claiming it to be "the most dainty of all Irises," while Hemsley, in his description accompanying the figure in *Bot Mag.*, t. 7926, considers it "one of the most graceful species of the genus." *A. T. J.*

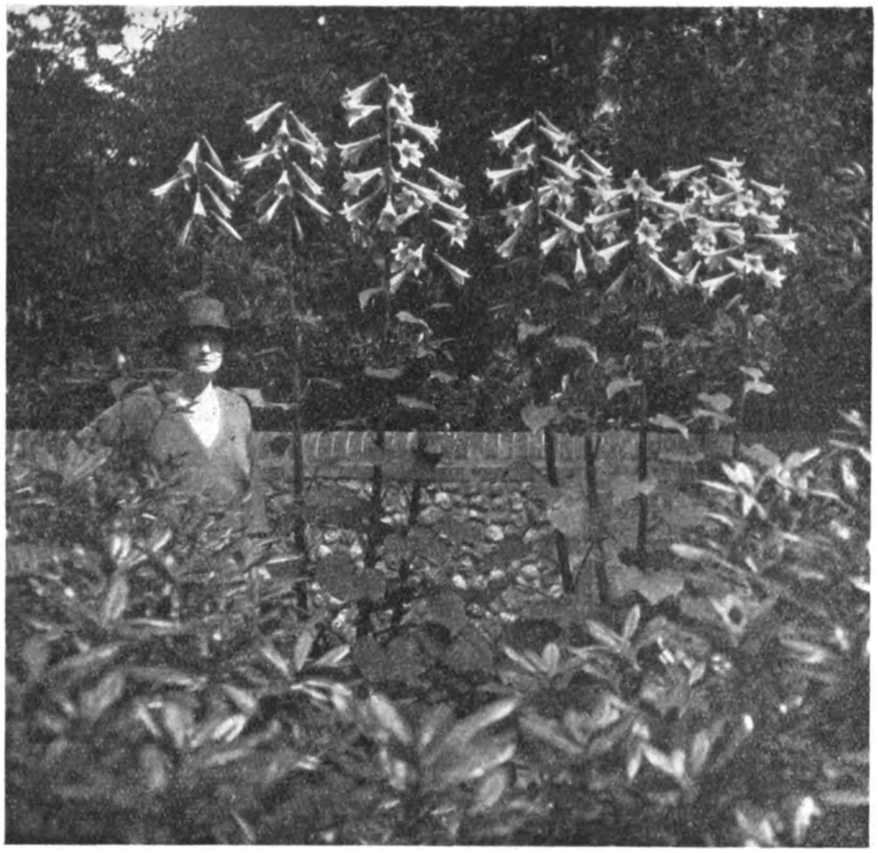


FIG. 67.—LILIUM GIGANTEUM AT MERTON HALL, NORFOLK.

LILIUM GIGANTEUM.

Lilium giganteum, the stateliest of all garden Lilies, though probably not the most showy, is one that adds very greatly to the attractiveness of a woodland garden or a wild garden. It loves shelter from wind, moist situations and a fair amount of shade, although the shade should not be too heavy. The accompanying illustration (Fig. 67) shows one of the groups of this fine Lily which have been flowering freely during the present year in the grounds of Merton Hall, Watton, Norfolk, the seat of Sir Edward and Lady Edgar. Lady Edgar (standing by the Lilies) informs us that the tallest plants in the group illustrated were about nine feet high and carried twelve flowers each, while some of the dwarfer plants carried eight to ten flowers each. Lilium giganteum is planted in several places in the woodlands at Merton Hall, and some of the groups contain finer plants than those shown in the illustration, but unfortunately these were not in a position to enable good photographs to be taken of them. Some specimens were up to ten feet high and carried from sixteen to eighteen flowers. In certain of the groups no transplanting has been done for several years, but the genial conditions provided appear to be so suitable that the annual display has not suffered as a consequence. It is, of course, customary to remove the young plants which appear around the base of the flowering stems and transplant them in suitable available places, as is the case at Wisley and elsewhere, where Lilium giganteum has proved such a great success. How long this Lily would continue to flourish provided the young plants were not removed, we do not know, and possibly no one has attempted to discover, seeing that transplanting is a means of increasing the stock and providing a large succession of flowering plants.

NOTICES OF BOOKS.

The Cactaceae.*

THE publication of a thoroughly exhaustive monograph of any given family is always an interesting event in the botanical world, but when the family is one of such peculiar interest as the Cacti, and the work executed with such lavish expenditure and wide knowledge as that under review, it is indeed a landmark. The fourth and last part of *The Cactaceae*, by N. L. Britton and J. N. Rose, made its appearance in Washington on Christmas Eve, 1923, and it is quite as beautiful and as thorough as the three parts which have preceded it in 1919, 1920 and 1922. The book now must rank among the most complete monographs that botanists possess. There have been minor works on Cacti from time to time since Haworth's *Synopsis* appeared in 1812, the last being the descriptive list by Karl Schumann in 1899 (in German) and his illustrations begun in 1903 and continued in parts until 1914, and resumed since the war, the last appearing in 1921. The most practical work available for gardeners is *Cactus Culture for Amateurs*, by W. Watson, of Kew (second edition, 1903).

This interesting family is almost wholly confined to America, so it was most fit and proper that the entire revision and investigation should be in the hands of American botanists. So long ago as 1904 the necessary field work was begun, and Dr. Rose, Associate Curator of the Division of Plants, National Museum, Washington, was also making herbarium and greenhouse researches. Already in 1905 he was growing a large number of specimens (which I had the privilege of seeing), and in the years that followed both in Washington and New York large collections of living specimens were being assembled. In 1911 the Carnegie Institution of Washington, acting on the suggestion of Dr. D. T. MacDougal, agreed to finance a yet more comprehensive investigation, and extensive work was begun. Every year from 1912 to 1917 expeditions were undertaken covering all the desert districts of both North and South America and the West Indies. Before these field operations were carried out, Dr. Rose came to England to see the dried and living collections at Kew and elsewhere, and visited all the chief botanical centres, public and private, in Europe, so as to gather all possible data. The collection at La Mortola is specially named, but it does not appear that he saw the wonderful garden on the rock of Monaco, in which H.S.H. Prince Albert took such great interest. The catalogue published by the chief gardener, A. Gastaud, in 1921, of 3,500 *Plantes Grasses*, includes many Succulents from other countries, such as Euphorbias and Mesembryanthemums, but also a large number of species and hybrids of Cacti. The 276 Cereus and 140 Mammillaria for instance would have directly appealed to Dr. Rose.

The major part of the financial help necessary for the vast field undertakings was furnished by the Carnegie Institution, but the Botanical Gardens of New York, and the Department of Agriculture also gave substantial assistance, and provided greenhouses where the Cacti collected were grown, as many as 5,000 at one time being cared for by Mr. Manuel Fraile. Many species of this family are slow to flower, and only by this system of careful observation could the information be forthcoming for the final classification. The herbaria collected on these exploring journeys was also very extensive, and the two great study collections which resulted (one in Washington and one in New York) would alone have justified the time and energy spent by so many skilled botanists, even without the printed results of their labours.

Most of the Cacti were first described by European botanists, but many of the types had been lost, and much confusion had arisen in consequence. The early students had found this peculiar family difficult to preserve in herbaria, and species were wrongly identified from the inability of comparison with the types originally described. To re-examine and correct such errors was one of the most important parts of the work undertaken by Drs. Rose and Britton. The authors paid visits to the West Indies, Panama, Peru, Bolivia, Chili, Brazil, Argentine, Uruguay and Paraquay, besides the earlier expeditions of Dr. Rose before 1913 in the Cactus deserts of Arizona and the neighbouring States and Mexico. The photographs which illustrate this work were, many of them, taken by Mrs. Rose, and are of remarkable interest showing the Cacti in their wild state. These plants are indeed among nature's curiosities! The monsters of the Cereanae and their kindred assume most fantastic shapes, like huge columns or the pipes of an organ, seven, ten, or even as much as fifteen metres high, some straight, others branching into shapes like giant coral. These weird-looking trees are glorified by wondrously beautiful flowers and brightly coloured fruits. Some species, as Cereus hexagonus, a favourite in West Indian Gardens, have flowers the whole way up the spiny stems. The most famous of all, the giant Cereus of Arizona, now named after the philanthropist, Carnegiea gigantea, and known locally by the Indian name Saguaro, attains some 35 feet in height, and plants of this size weigh so much as 6 to 8 tons, and must be at least 150 to 200 years old. The first 30 years of their life they only attain about 3 feet, so slow is their early growth. These forbidding-looking trees are graced with Water-Lily-like flowers set in a cluster on the top of the stem, and have, like many of the tribe, edible fruit. Even this giant is not unique in size or weight: other species, such as Lemaireocereus Weberi, which rises to a height of 10 metres or more, attains to a far greater weight, as the short trunk has hundreds of upright branches.

The sturdy trunks of Trichocereus pascana, which abounds in the rocky plains of Argentina and Bolivia, are used for making rude huts. Other species creep along the ground, among them the uncanny looking Machaerocereus eruca, well named the "Creeping Devil Cactus," which crawls over obstacles like a caterpillar and roots itself again in the ground. In striking contrast to these monsters are the diminutive members of the family, such as the "Button Cactus of Texas" (Epithelantha micromeris, formerly classed as a Mammillaria), with tiny flowers rising from the centre of a button, barely an inch across, or Frailea pygmaea from Uruguay, half buried in the ground and only one centimeter in diameter.

The plates, of which there are 137 of full-page size, mostly in colour, and 1,100 figures in the text throughout the volumes, are excellent. Those in colour, reproduced from sketches by M. E. Eaton, are most perfect in drawing and tone. There are so many which are really beautiful, that it is impossible to pick out any one for special praise. The texture of the prickly, fleshy substance and the dainty forms and colours of the lovely flowers are most truthfully and artistically reproduced.

The authors have adhered to the three chief tribes already recognised by botanists, namely, Pereskieae, which has leaves more like normal trees; the Opuntieae or Prickly Pears; and the Cereeae. The changes in classification which Doctors Britton and Rose have effected, have been possible owing to the close observation of the plants to a far greater extent than ever previously attempted. Karl Schumann had adhered generally to the arrangement of Joseph Salm-Dyck in 1849, but this classification was often based on external characteristics, and not on the reproductive organs. A great number of the species now described were unknown to former writers. Schumann, in 1903, made 20 genera (of which 16 belonged to the third tribe), including some 800 species. The present writers have described 1255 species, grouped in 124 genera. It is impossible to go into many of the details of the changes in nomenclature. The third tribe, Cereeae, which contains three-quarters of the species of the Cactaceae, is divided into eight natural sub-tribes, the two first of these, Cereanae and Hylocereanae, were both before included in the genus Cereus. In the second of these sub-tribes they now class all the trailing species which emit aerial roots—the beautiful night-blooming "Queen-of-the-Night" and such like. The third sub-tribe, Echinocereanae, has also received additions. The first genus in it, Echinocereus, now includes many new introductions from the Argentine, so that the 39 species formerly recognised have grown to 60. The careful revision of each genus has not always ended in such augmentation. In the case of the Cactus or Melocactus, popularly known as "Turks' Caps," the multitudinous varieties had led to a mass of species being described, whereas closer field study has revealed only 18 really distinct species. In like manner, Doctors Britton and Rose tabulate only 28 species of Echinopsis, but even that, they consider, may be excessive in spite of the 200 names previously published under that genus. The fourth sub-tribe, Echinocactanae, is divided into 28 genera. In re-establishing one of these the authors revert to what they consider the correct nomenclature of George Lawrence in 1841, of Echinofossulocactus, which is remarkable for its cumbrous length even among Cacti.

With regard to the other two main tribes, the first, Pereskieae, is reduced to one genus with 19 species, and the second, Opuntieae, contains 7 genera and at least 300 species. There is an immense difference among these "Prickly Pears." The species with curious flat leaves covered with spines, which form impenetrable hedges in all hot, dry countries, are well known; but there are besides classes with cylindric stems and these are variable in size, some, such as Opuntia caribaea rising 3 to 9 feet high, form dense thickets in San Domingo; others such as Opuntia arbuscula, in Arizona, look more like regular trees. Among those with flattened joints, some (O. robusta, or Lindheimeri, for instance) grow to 12 or 15 feet, others of similar form are prostrate, or climbers, or spread along the ground. Perhaps the most distinct of all is Opuntia floccosa, which is covered with a mass of long white hair and grows in the high valleys of the Andes. The number of all the curious forms, with their lovely flowers and quaint juicy fruit is not often realised, and the volume devoted to them would well repay study.

The fourth and last volume of this exhaustive work deals with the sixth, seventh, and eighth sub-tribes of the Cereeae (Coryphanthanae, Epiphyllanae, and Rhipsalidanae). The identification of any one individual should not be difficult, so carefully are the keys to genera and species drawn up, and so good are the photographs and coloured drawings of the various types. Plate IX is as good as having the growing plants of Neomammillaria before one. This part also contains a most complete index to the whole of the book, and has an appendix with additions and discoveries since the appearance of the earlier parts. It is greatly to be hoped that public libraries will purchase this monumental work so that gardeners, enthusiastic amateurs and botanical students who cannot aspire to possession, may have a chance of consulting it. The growing of Cacti is a hobby with much fascination, and access to these volumes would be likely to stimulate a taste for them, and revive what was a fashion in this country well nigh a century ago. *Alicia M. Cecil.*

---

* *The Cactaceae: Descriptions and illustrations of plants of The Cactus Family.* By N. L. Britton and J. N. Rose. The Carnegie Institution of Washington, 1919–1923.

JUDGING ARTISTIC EXHIBITS AT FLOWER SHOWS.

The question of judging rock gardens or any exhibits of artistic quality at our more important shows refuses to be settled to the satisfaction of exhibitors, judges, and the public. The art of gardening, like any other branch of art, consists of a variety of styles and "outlooks." As well might one presume to award prizes at the Royal Academy. It may be retorted that the Royal Academy, at any rate, accepts and hangs pictures on their merits. Quite true; but it only, theoretically at any rate, professes to weed out those pictures which do not conform to, or which violate, the generally accepted, or rudimentary rules of art. Even then, amongst more enlightened artists, the Royal Academy is recognised as being merely representative of one large class of work and, indeed scarcely pretends to be otherwise. In painting one may see almost as many different expressions as there are exhibitors, and to draw a comparison between the work of one artist and that of another is simply the bad manners of a precocious child.

Broadly applying these maxims to rock gardens and other exhibits of a more or less artistic nature, one may certainly reject some efforts on the ground that they lack a sense of the rudimentary principles of art—those rules which every artist, be he a "modern" or an "academic" man, must accept as the foundation of every piece of work.

But what about the better ones left? If a rock garden is bright with suitable flowers, but not so well built as the outcrop next to it, which latter is, however, much quieter (duller, if you like) in its planting, to which shall the first prize be awarded? Most judges should see a difficulty here, but not many do, and the result is a "decision" offensive to exhibitors and to the public—the latter always the best judges, by the way.

In other words, it is inevitable that the whole of a judge's view and judgment are based on his personal tastes, and that in principle, therefore, it is wrong to judge artistic efforts.

At two of our large shows where I have been asked to judge I have endeavoured to set up a criterion or standard of excellence which I respectfully suggest is worthy of being considered by exhibitors when they are asked to compete for prizes. Although, as I have implied above, I do not believe in judging rock or formal gardens at all, I accepted the work on condition that the maximum points to be awarded for each feature to be "judged" upon should be published by the Committee in their schedule.

At Shrewsbury this was done and again at the recent Southport Show, exhibitors being notified how and on what points they would be judged if they entered for competition. This is as fair and honest a method as can be adopted, and I recommend it to other shows—if they *must* give prizes for showing. The values of the points were published on page 172 of *The Gardeners' Chronicle* so they need not be re-stated here.

But far better would it be if Committees would adopt the simple remedy of offering a respectable sum of money (to cover part of the expenses) to a number of good class exhibitors, giving them all possible help on the show ground, giving the space each applies for (or in proportion as can be spared), and leaving the rest to them.

Southport Show, in its large number of entries in the rock-garden class for instance, provided a glaring example of the evils of judging for awards. In this case the first prize exhibit attained 80 points, the second 72, the third 70 and the fourth 69.

It will be apparent at once from these figures that there is too small a margin of difference between the points gained by the second, third and fourth prize-winners respectively, and when I add the fact that the fifth (if there had been a fifth prize) was only one point below the fourth, the judging of these efforts on any but a pre-arranged plan would have been a criminal absurdity, and even with the table of points to go by it was no light undertaking for Mr. C. Elliott and myself. Of course this Show provided an exceptional case, for seldom, and never before in the provinces, have I seen such a number of exhibits so near to one another in their merits.

It might be urged that my suggested plan would destroy competition, but I am perfectly certain that it would not, but would, on the contrary, promote a more healthy and competent competition than ever, as our present-day exhibitors are all professionals, and they know only too well that the buying public are more and more likely to choose the piece of work that appears to them the best than to be unduly influenced by the awards of the judges—again pointing to the fact that individual taste gives room for every class of exhibit to receive its measure of support.

At one of our biggest Shows some few years ago where I was offered the chief "award," it gave me great pleasure to refuse it on the grounds that the acceptance of it would be inconsistent with my principle of "no awards for artistic efforts." When I voiced this principle to the disturbed secretary I believe he thought I was daft. I think, however, that after-events have proved quite sufficiently that I was right. I could now bring forward, I think, the whole of the more reputable exhibitors of artistic garden exhibits to uphold my views against awarding prizes for their efforts.

I have often been asked why I consistently refuse awards at flower shows and decline to have my exhibits judged, and I think the answer is now sufficiently put forward. *John Wood, Fitzroy Street, W.*

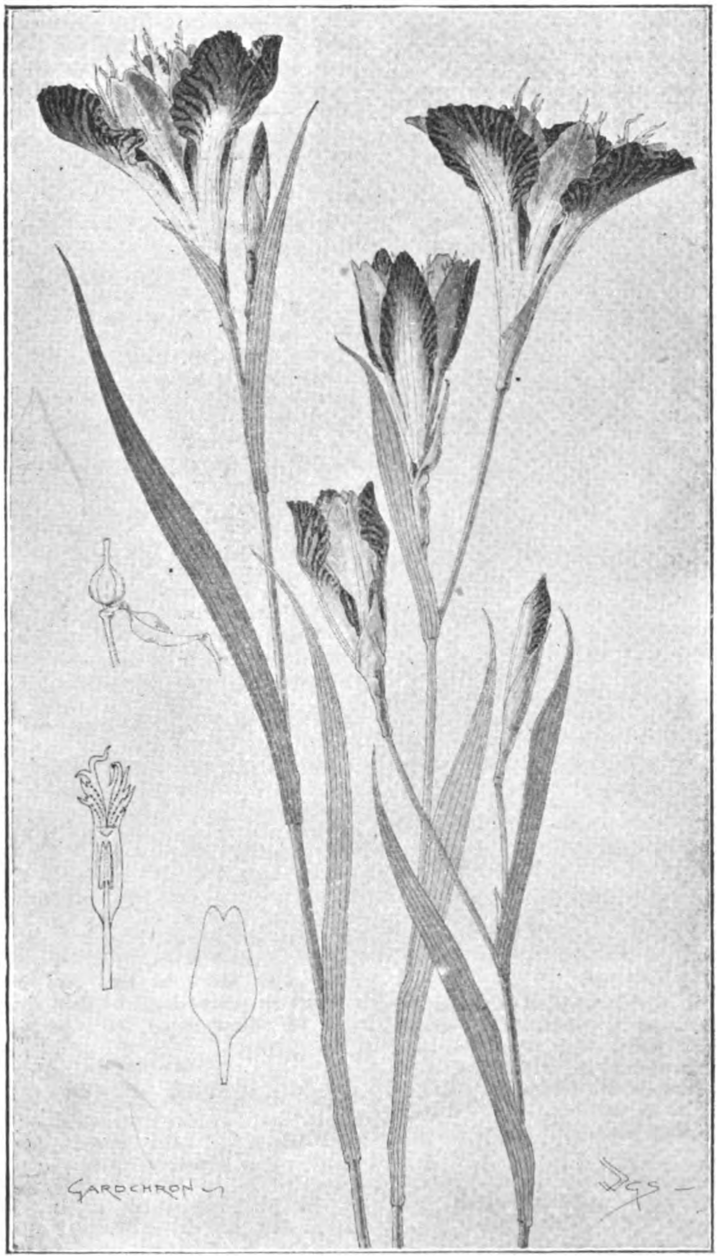


FIG. 68.—IRIS GRACILIPES.

Flower lilac, falls with a yellow crest (see p. 179.)

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden. W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

MARKET FRUIT GARDEN.

DURING August 4.61 inches of rain fell on seventeen days at my place. I have records of the rainfall back to 1911, and only twice in that period of fourteen years has the month been wetter. In 1917, 5.66 inches fell on twenty days, and in 1912 we had 5.48 inches on twenty-three days. The frequent rain has been very hindering to the gathering of crops, but, apart from that, it cannot be said that they have suffered to any extent.

A much more serious result has been the depressing effect of wet weather on markets. I depend chiefly on local seaside markets, and the demand for dessert fruit on the part of visitors is naturally influenced enormously by the weather.

Weeds, of course, have flourished exceedingly, for there has been no opportunity to check them. I do not mind this provided that we get a dry autumn in which to deal with them. The weeds form a green manure crop of a kind, and undoubtedly prevent the washing out and waste of much soluble plant food.

Fruit trees have made considerable growth of a somewhat sappy nature, which will need a dry autumn for ripening off.

Crops and Prices.

Markets this season are disappointing and difficult to understand. Crops of Plums and Apples are decidedly lighter than they were last year, taking the country as a whole; and imports of Plums from the continent have been much less. Yet prices have, in many cases, been lower. Latterly sales have been influenced by bad weather and by the strike of porters at Covent Garden, which caused some flooding of southern markets; but even during sunny July prices were low considering the light yield of fruit. Plums have undoubtedly been very scarce, with the single exception of Czar, of which every grower seems to have had a heavy crop; yet they have sold at quite moderate prices. Mid-season cooking Apples are the bright spot at present.

Fortunately, I have quite good crops of Royal Jubilee, Queen and Lord Derby, and there is a satisfactory proportion of first-grade Apples amongst them which realise 10/- to 11/- per bushel—a very nice price. Dessert Apples, on the other hand, have not made anything like high enough prices to compensate for the very low yield.

Unfortunately the public are not getting the benefit of moderate prices. I often see my own fruit in the shops and am able to compare wholesale and retail prices. Generally the retailer seems to aim at a margin of 5/- to 6/- on every half-sieve of fruit he buys. In the case of Czar Plums, which sold wholesale for the most part at 8/6 per half-sieve of 28 lb., the price in some shops was 8d. per lb., which allows for a margin of 10/- per half-sieve, or rather less if proper allowance is made for loss in weighing out in small quantities. These figures refer to a seaside market.

Manuring for Fruit.

I am not doing any summer or early autumn manuring this year, partly because few of the trees are overburdened with fruit, and most of them are making plenty of growth, but more for the sake of economy. I do not feel quite easy as to the wisdom of the omission, however. There are several instances which point to good results from this manuring in recent years. I refer to its influence in overcoming biennial bearing to some extent. For example, this is an "off" year for Lane's Prince Albert on my place, following a big yield last season. Yet I have more fruit than is usual in the "off" year. More striking, however, is the case of one row of Golden Spire. There are five trees at one end of this row which bear heavily every other year, whilst the rest of the row bears in the intervening years.

This alternate bearing has gone on consistently for many years. This season it was the turn for the five trees and they were loaded; but there was quite a respectable amount of fruit on the rest of the row as well. In other words, some treatment has tended to throw these trees out of their biennial-bearing habit. I can only attribute it to manuring. Whether it is simply a matter of generous feeding, or whether there is anything in the season at which it is done, I cannot say definitely; but I have a strong feeling that feeding with soluble fertilisers at some time during the growing season is what is required. Private gardeners have done more of this in the past than market growers have done, and should be able to throw some light on the subject.

Grading Apples.

For some years I have been using a mechanical grader for sizing Apples, but this season I have put it on one side, as many other growers have done. There are times when it helps in the rapid handling of the fruit, as when there are many very small Apples to sort out; but it is not quite a satisfactory machine. The grades made are seldom quite what one wants, and at the best of times there is always a lot of hand grading to be done after the Apples have been through the machine. Moreover, unless used very carefully there is apt to be a little bruising.

A really satisfactory mechanical grader would, of course, be an enormous advantage, particularly when packing in boxes is being done. Probably the only machine which answers to this description is the American Cutler grader. Several growers in this country have installed one of these. It grades each Apple by weight, and thus sizes them perfectly. It is, however, much too expensive for any but the largest growers. Moreover, it occupies a lot of room, and has to be driven by an oil engine or other power.

I have not reverted to my old plan of packing straight from the boxes in which the Apples are brought in from the orchards. Instead, each packer is provided with a table with stretched canvas top, and with supports at the sides to carry baskets or boxes. When the Apples are tipped out on to the canvas they lie in a single layer, and the sizes are easily distinguished. Even with cooking Apples packed in baskets I often make four grades. This plan is almost as quick as packing from the grader. There is, however, rather more supervision needed in order to keep the grades even, as individual packers are certain to vary a little.

Plums are also graded by hand on a canvas-topped table, but this is done in the orchard. The main object is to extract any split or diseased Plums; but I generally make two grades according to size. The appearance of the sample is greatly improved by so doing.

"Reversion" in Black Currants.

When rogueing my Black Currants for "reversion" some weeks ago I was puzzled by some of the bushes planted last winter. Some of the shoots had branched out into a regular head of smaller shoots, the leaves of which showed the characteristics of "reversion." As the bushes came from a reliable source, I hesitated to rely on the leaf test and grub a lot of them. It was decided that there might be something abnormal about the occurrence, and they were left with the idea of cutting back below the branching point next winter. I am very glad now that I came to this decision, for I have just been reading Mr. F. J. Chittenden's admirable contribution, "Nettle-head of Black Currants: a Review," in the *Journal* of the Royal Horticultural Society for July, which seems to throw more light on the subject. He states: "Diseased bushes often branch more copiously than healthy ones, and the buds formed in early summer often grow out into shoots before autumn is past. This may be the result of mechanical injury to the upper buds, or of extra vigour, or of an over-abundant supply of water, and cannot by itself be used as a mark of the disease." In such a year as this the cause might easily be too much water.

The Leaf Test.

Mr. Chittenden offers some useful criticism of the leaf test, which shows that it must be used with common sense and not applied too rigidly. He points out that a reduction in the number of veins may be brought about by other causes besides "reversion," such as bad weather or poor soil interfering with the proper growth of the bushes. When this reduction is brought about by one of the external conditions referred to, on the recurrence of better conditions the new leaves produced have their normal number of main lateral veins. He points out also that abnormal growth is frequent in the cutting bed. No doubt he is right, but for all that I do not think I shall ever again plant out bushes which appear doubtful under the leaf test in the cutting beds, experience having taught me a severe lesson of the danger of this. Mr. Chittenden prefers the test introduced by Mr. W. P. Seabrook: the absence of down on the unopened flowers of diseased bushes or diseased parts of bushes. This is certainly reliable, and, in the case of most varieties, very easily carried out after a little experience.

"Nettle-head" *v.* "Reversion."

By the way, objection is raised against the term "reversion," because it suggests the idea that the bush has gone back to a condition which its ancestors showed in some more or less remote past; and this is untrue. Varieties of plants propagated vegetatively do not revert. The term "nettle-head" is preferred. *Market Grower.*

PLANTS NEW OR NOTEWORTHY.

DAVIDIA VILMORINIANA.

Davidia Vilmoriniana, well-fruited sprays of which (Fig. 69) were shown at the Royal Horticultural Society's meeting on August 26 last, is a native of North-western Hupeh and is found is quantity in moist situations between altitudes of 1,600 and 2,600 metres It is to Messrs. James Veitch and Sons that we owe the distribution of this magnificent tree, for in 1899 their collector, Mr. E. H. Wilson, was specially commissioned to obtain seeds of this Davidia in China, and he succeeded in gathering a large quantity from which some thirteen thousand specimens were raised.

Previous to Mr. Wilson's first expedition to China, Davidia Vilmoriniana had been met with in Wushen Hsien by Prof. A. Henry in 1888, who found but a solitary specimen; eight or nine years later Pére Farges discovered it in north-eastern Szechuan. M. Maurice de Vilmorin secured a single specimen from the seeds sent to him by Farges and from this plant cuttings were rooted and distributed. The original specimen flowered for the first time in 1906 and was figured in *The Gardeners' Chronicle* (p. 346, June 2. 1906) from a photograph sent by M. Vilmorin under the name of D. involucrata.

Dode in *Revue Horticole*, 1908, p. 407, considers D. Vilmoriniana worthy of specific rank, and the specimen shown recently at Vincent Square by the Director of Kew, was likewise similarly honoured. In *Plantae Wilsonianiae*, Vol. 2, p. 256, and in *Bot. Mag.*, t. 8432, the tree is described as a varietal form of D. involucrata. Wilson regards it as "nothing more than a glabrous-leaved variety of the type. In the adult trees there is no other difference between the type and the variety; in the juvenile stage even this disappears and the only distinguishing character is the colour of the young shoots, which is dull grey or slightly purplish in the variety and dark red in the type." Dode in *Revue Horticole*, 1908, p. 407, also describes Davidia laetea which Wilson considers a variable form found on specimens of D. Vilmoriniana growing in shade. Bean, in *Trees and Shrubs Hardy in the British Isles*, p. 477, is of the opinion that the differences between D. Vilmoriniana and D. laetea are not sufficient to constitute a species.

From the above it will be readily understood that D. involucrata and D. Vilmoriniana bear a close resemblance to each other. Much of their beauty rests in the large, cream-coloured bracts which surround the heads of flowers. The fruits are pendulous, oblong-ovoid and about one-and-three-quarter inch long.

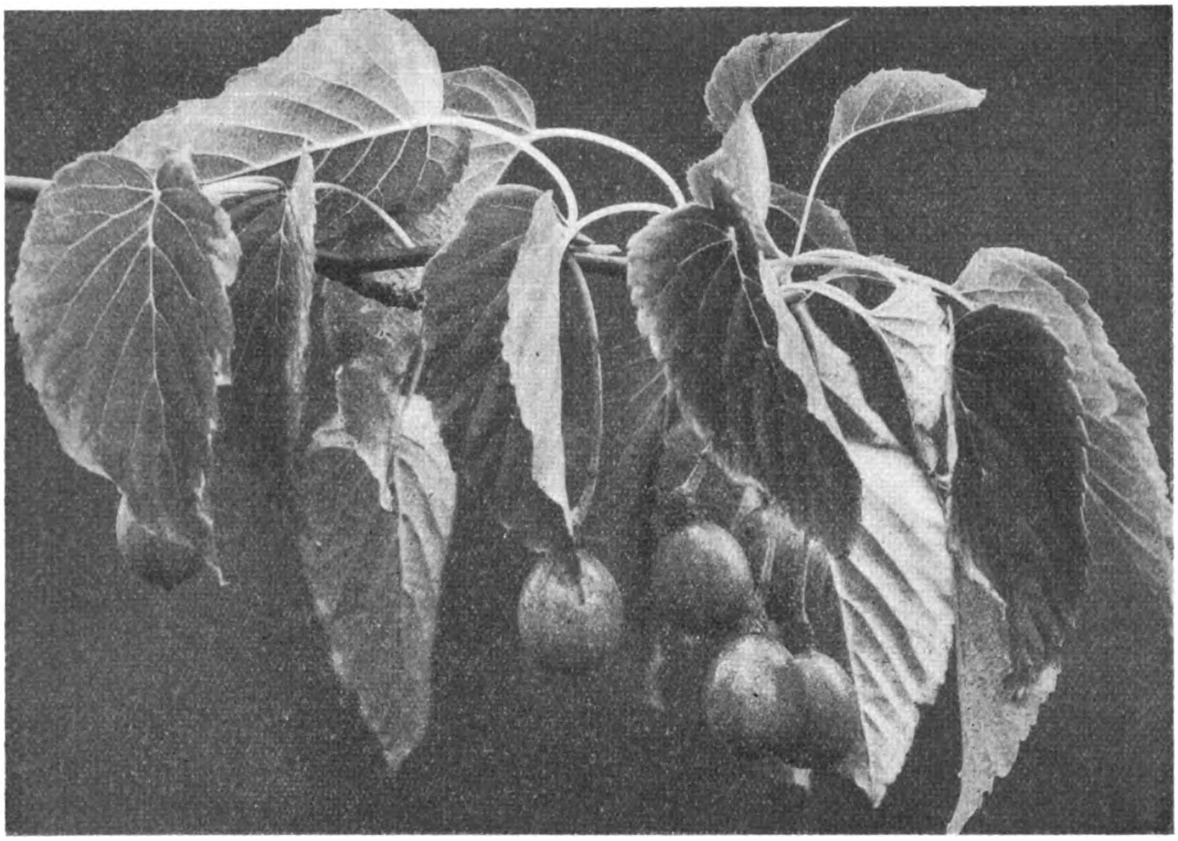


FIG. 69.—FRUITING BRANCH OF DAVIDIA VILMORINIANA.

NOTES FROM WISLEY.

It is a recognised fact that many colour names which are applied to flowers on the continent have a different significance when used in this country, and *vice versa*. This may account for the apparent unsuitability of the colour names given to certain varieties of flowers, as, for example, to annual Scabious.

A very large number of these plants, varieties of Scabiosa atropurpurea, are on trial and are flowering at Wisley, comprising both tall and dwarf sorts. The former are valuable for cut-bloom and bear stems often two feet long, while the latter make excellent bedding plants. Attractive varieties are Enchantress, with pink flowers, Azure Fairy and Skylark (lavender), Black Prince and King of the Blacks (blackish-maroon) and Snowball, with well-formed, white flowers. A number of yellow-flowered Scabious are also on trial.

As an example of colour discrepancy, the flowers of Fire King are crimson-lake and those of Scarlet approximate the shade known as old rose.

The recent showery weather, if it has done nothing else, has promoted a fine show of Violas selected from last year's Viola trial at Wisley, which have been planted in the border under the old Apple trees flanking the Sweet Pea trial. Conspicuous varieties are Royal Sovereign (yellow), Purple Jubilee, Snowflake, and Archie Grant with violet flowers.

On the rock garden Rhus Cotinus, the smoke tree, is now very beautiful. Another shrub which, like the latter, is more attractive in the fruiting stage than at any other period, is Euonymus nana, with its coral arils and orange seeds, of which there are an unprecedented number this year.

The majority of the Crocus species, which provided such a brilliant display in the Alpine house frames earlier in the year, have been planted out in the sheltered beds at the foot of the rock garden where they should do well.

Some Lavender species have also been planted along the walk leading from the laboratory to the rock garden, and among those flowering now is the curious Lavendula Stoechas, known as French Lavender. The flowers are dark purple in colour and borne on short-peduncled spikes. The tomentose leaves are entire and about half-an-inch long.

In the herbaceous borders, Paeonia lutea which is now shedding its bluish seeds, is not unattractive owing to the reddening of its persistent calyx and of its leaves. Good forms of Anemone japonica rosea are conspicuous as are the tall, feathery spikes of Cimicifuga cordifolia. One of the tallest growing plants in the borders is Rudbeckia maxima, the yellow ray florets of which are dominated by a great black cone. Many species of Solidago are in flower, one of the most satisfactory of which is S. rigida; near to this is a good clump of the blue Eryngium planum. *J. E. White.*

NURSERY NOTES.

MESSRS. DOBBIE AND CO., MARKS TEY.

There is a danger that some hypercritical reader will take exception to a record of the activities of Messrs. Dobbie and Co., Ltd., of Edinburgh, as exemplified at Marks Tey, in Essex, under the general heading, "Nursery Notes," on the ground that the place is not a nursery at all, but a seed farm; but that must be risked. After all, nursery is a word of wide meaning and it does not seem to be a matter of serious moment whether the ultimate end of its productions go forth to the absorbing public in the form of plants or of seeds. The one desideratum is to give the public precisely what it demands in the form of plants or perfect seeds, and it is outstandingly obvious to those who visit Messrs. Dobbie's place at Marks Tey that nothing is left undone which will go to the production of seeds of flowers and vegetables that are as nearly perfect as can be.

Travellers from London by the L.N.E.R. to most of the principal resorts on the east coast admire brilliant areas of flowers on east and west after passing Witham, continue among the floral beauties, with fine fruit trees added, at Kelvedon, until on the east they see the businesslike, if not artistic, written token "Dobbie's Seed Farm." They enjoy a momentary glimpse of miles of serried lines of Sweet Peas, of dwarf and tall flowers in great expanses of gorgeous or subdued colours, and belts of vegetables of apparently never-ending extent; but they cannot see all, and it is impossible for them to conceive the constant activity of men and horses and machinery striving for, and mostly achieving, excellent material to feed the unceasing demands of the firm's great warehouses in Edinburgh whence the products of Essex find their devious ways to the uttermost parts of the earth.

The actual extent of this horticultural centre is eighty-five acres, and it is devoted exclusively to the growth of seeds. It it true that on occasions plants are lifted for exhibition in London or elsewhere, but these are so few out of the millions grown that they are scarcely worth mention. Nevertheless, it affords opportunity to remind readers of the remarkable lasting powers of the firm's Dahlia-flowered Zinnias, to which the Royal Horticultural Society gave a Gold Medal and an Award of Merit at Vincent Square on July 22. Flowers from these selfsame plants were kept in water for sixteen days subsequently and then turned out, not because their attractiveness had gone, but because the demand for a change was too insistent to be ignored. Here is a plant with a splendid future, which, like the Zinnias of a generation ago, must be well grown if it is to do itself and its grower full credit. This is, however, a digression.

Notwithstanding the fact that the firm has eighty-five acres devoted to the production of seeds, it makes no claim to grow all the seeds that it sells to its customers, indeed, it throws out no hint in that direction. To attain to that end it would demand weather conditions which neither Essex nor any other part of the British Isles could furnish, and the area of land would have to be nearer eight-hundred-and-fifty than eighty-five acres. Dobbie's have, similarly to other leading seed houses, specialities, and it is upon these that there is the most intense concentration at Marks Tey for hardy kinds and at Edinburgh for those which must have under-glass treatment (the exceptions to this are Cucumbers and Melons for which a congenial place is found at Marks Tey).

The better to emphasise this point of specialisation, it may be mentioned that Messrs. Dobbie and Co. have been to the fore with Sweet Peas from the earliest days when the Queen of Annuals sprang from obscurity, and it will be gathered that it is their intention to remain in the van when it is said that twelve acres are devoted to Sweet Pea seed alone at Marks Tey this year. Literally loaded down with seeds the yield will mount into tons, and every variety worth growing, whether it is in or out of commerce, is represented. Here are no ten-feet Bamboos, but ordinary sticks whose normal strength would be equal to supporting any ordinary row, but which are quite incapable of holding up the enormous weight of plants and seeds seen on the occasion of this visit. Every variety true to the last bloom and every variety in full crop justifies the modest pride of the manager, Mr. Donald Allan, as he points to them, and justifies, too, his hope that he will be able to satiate Edinburgh's appetite for one thing at least once in his lifetime. A few of the most notable varieties may be named. Shining brilliantly in the sunshine was Grenadier, cochineal, which will come on the market for the first time this autumn; softer, but not less conspicuous was Rose Maiden, pale rose self with many double standards; distinct, and sure of appreciation, was Ruby, bright carmine ruby; exquisite, but it must have shade from sun, was Royal Sovereign, rich, pure orange and of exceptional constitution; large, refined, fragrant, an American, but fine for all that, and probably the best of all the Picotee-edged group, was Youth; noble in size and rich in colour was Crimson King, another American variety; and standing alone in size, refinement, and delightful colour was W. Unwin, deep, yet soft, salmon-pink on cream ground. There were scores of others, but these must suffice.

To turn now to flowers of other kinds before looking at the least spectacularly beautiful, but more economically useful vegetables. No one can grumble if a start is made among the Antirrhinums, since these rank with the greatest garden flowers of the age which, doubtless, was Mr. Cuthbertson's reason for associating them with Sweet Peas in a most admirable little booklet which Messrs. Dobbie's published a few years ago. Of tall ones that should be in every garden we remember Primrose King, Yellow King, Cottage Maid, rose pink, white throat, and a superb mixture of Dobbie's Selected Striped without which the Scotsmen could not live. Then in the intermediate section we do not forget Maize, Mauve, and Amber Queens, Fiery Belt, Fascination, Coccinea, Bonfire, Dobbie's White Beauty, and finally, Magpie, glowing scarlet, rich yellow lip, which bids fair to be the brightest bedder of the lot. The very fact that the firm's strain of long-spurred Aquilegias has received the Gold Medal of the Royal Horticultural Society is sufficient commendation without further words, so a passing thought shall be given to those grand Marigolds, Dobbie's Orange King and Dobbie's Sulphur Queen; they are more popular in Scotland than in England, but that is no credit to the perspicacity of the Englishman. Dobbie's White Spiral Candytuft from autumn sown seed is a Candytuft that stands alone in its magnificence. Double Clarkias are fickle in their doubleness, but there could be no doubt in the case of the rich Vesuvius and the refined alba since both were perfect. Delphiniums, Hollyhocks, Pentstemons and Gypsophilas, especially G. paniculata fl. pl., were wonderfully rich among the perennials and would have extended mention did not space forbid. Wide breadths of Nasturtiums, Nemesias, Nigellas, Salpiglossis, Poppies, and other plants confront the visitor, but they must wait another year for specific reference.

It is impossible to differentiate in excellence between the many vegetables from which choice could be made and the few that may be named must be accepted, therefore, as typical of all. No one who saw the Onions growing for seed dare question the striking effect that the upstanding spikes create; the leading varieties are Dobbie's strains of Ailsa Craig, Main Crop, Golden Globe, Selected Red and Cranston's Excelsior. Then there are Champion Long-pod and Selected Broad Windsor Beans; the enormous and wonderfully prolific Champion Scarlet Runner; the Beetroots, every root of which is cut to test the colour before it is planted for a seed crop; the Kales which form the base of at least one of Scotland's national foods; the Carrots, Celery, Leeks—and so the story might go on until a whole issue of *The Gardeners' Chronicle* was filled with things worth while, but the powers forbid. Two other subjects only; one a house of Dobbie's Improved Telegraph Cucumbers and the other a house of Dobbie's Victoria Melons; there were never better crops seen, it is doubtful, indeed, if better could be produced.

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

HELICHRYSUM BRACTEATUM.

There are many beautiful varieties of this plant, which is commonly called the Everlasting flower. It is a half-hardy annual and very suitable for pot culture. The plants usually attain a height of three to four feet and they are very suitable for furnishing beds in the conservatory. For this purpose three or four plants may be placed in a single pot and potted on until they are in seven-inch or eight-inch pots.

The successful cultivation of Helichrysum presents no difficulty as plants grow freely in any good potting compost. The first sowing may be made during February, and by successional sowings plants may be had in flower throughout the summer and autumn, growing them under perfectly cool conditions at all times. Where it is desired to use the flowers for decorative work they should be cut before they are fully open.

There are many beautiful "everlasting" flowers native of South Africa and West Australia, but unfortunately few, if any of them, are in cultivation at present. *J. Coutts.*

TREES AND SHRUBS.

BERBERIDOPSIS CORALLINA.

Although this very beautiful Chilian climbing shrub is seldom seen in gardens, it appears to be much hardier than is generally supposed. For some years we grew it on a west aspect in soil that was rather dry and hot, and it was not a success. It was then moved to a north-east wall, the root run there being comparatively cool and damp but the drainage quite free. It quickly responded to the change; the plant is now about eight feet high, growing vigorously, and it flowers every year. A little leaf-mould was mixed with the somewhat light loam at planting time, but the shrub has had no other attention in the matter of feeding. Although we have had from 16° to 20° of frost on various occasions, the plant, which is quite unprotected (save by the wall), has never been injured.

The prickly, horny, glaucous-green leaves of B. corallina, as well as the flower, suggest an affinity with the Barberries, but the authorities do not appear to acknowledge any such relationship. The blossoms, which appear in early August and continue to October, are borne in drooping clusters on long stalks, these latter being of the same rich blood-crimson as the globular flowers, whose many incurved segments give them a "double" appearance. Being a twining shrub, B. corallina needs some support, and galvanised sheep-netting, which is very durable, is used by us for the purpose. *J.*

IMPERIAL BOTANICAL CONFERENCE.

(*Continued from p.* 170).

DR. D. HAYNES gave the biochemical evidence of the metabolic drift in Apples. The gradual loss of acidity is characteristic of stored Apples, and probably measures the difference between rates of production and consumption. The rate of consumption of organic acid is a mass effect determined by acid concentration in the protoplasm. The rate of production from sugar in respiration is probably dependent on the hydrogen-ion concentration in the protoplasm and the changing acidity of the juice of Apples in storage is mainly due to changing mixtures of malic acid and malates. Miss H. M. Carré described the pectin changes in stored Apples.

Dr. Franklin Kidd spoke on the rate of senescense and the conditions of its control. The rate of senescense of stored Apples can be retarded by cold, by low oxygen concentration and by moderate carbon-dioxide concentration. This retardation can be directly observed in storage by increased longevity, by postponement of the brown phase inside the Apple, and the delay of the fungus invasion phase on the surface. The rate of senescense has been measured by a statistical study of the fate of a population of Apples of various previous histories and under various storage conditions. The rate of invasion by fungi per unit area of Apple and unit time gives a measure of the progress of senescence. The rate of senescense has also been investigated by following the course of respiration as an index of the metabolic drift. The course of the respiration of Apples picked at succesive dates and then kept at temperatures of 22°, 15°, 8° and 1° C. appears to be very divergent in the respective cases, but all can be referred to a common form, characteristic of the senescent drift of metabolism.

At least three methods of retarding the rate of senescence seem possible; two of them, the use of cold and of "gas-storage" which turns on the use of gas mixtures poorer in oxygen and richer in carbon dioxide than ordinary air, have been investigated. A third possibility is that of lowering the water content of the Apple by partial drying. This has not yet been fully investigated because of the economic obstacle, that no salesman will look at shrivelled Apples however good they may be to the taste. Considered biologically the enquiry is one into the longevity of a population not of human beings but of Apples, and may be treated on parallel lines. In contrast to the environment of a human population that of a cold store is extremely uniform. But growing on the tree the Apples, in adolescence, have had more varied and adventurous careers, and the extent to which the circumstances of early growth affect the duration of life after picking has been examined. The effect is considerable and complicates very much the lines of physiological enquiry.

The fruits of the different varieties of Apples, of course, differ largely in longevity and keeping power, but it has now been made clear that, for any one variety, the longevity varies greatly according to the age of the tree, the soil of the orchard, and the season in which the crop was grown. Dr. Cyril West summed up the biological side of the whole investigation.

At the meeting running simultaneously, Dr. W. Brown gave an account of his studies in the genus Fusarium, chiefly concerning the interesting saltation which

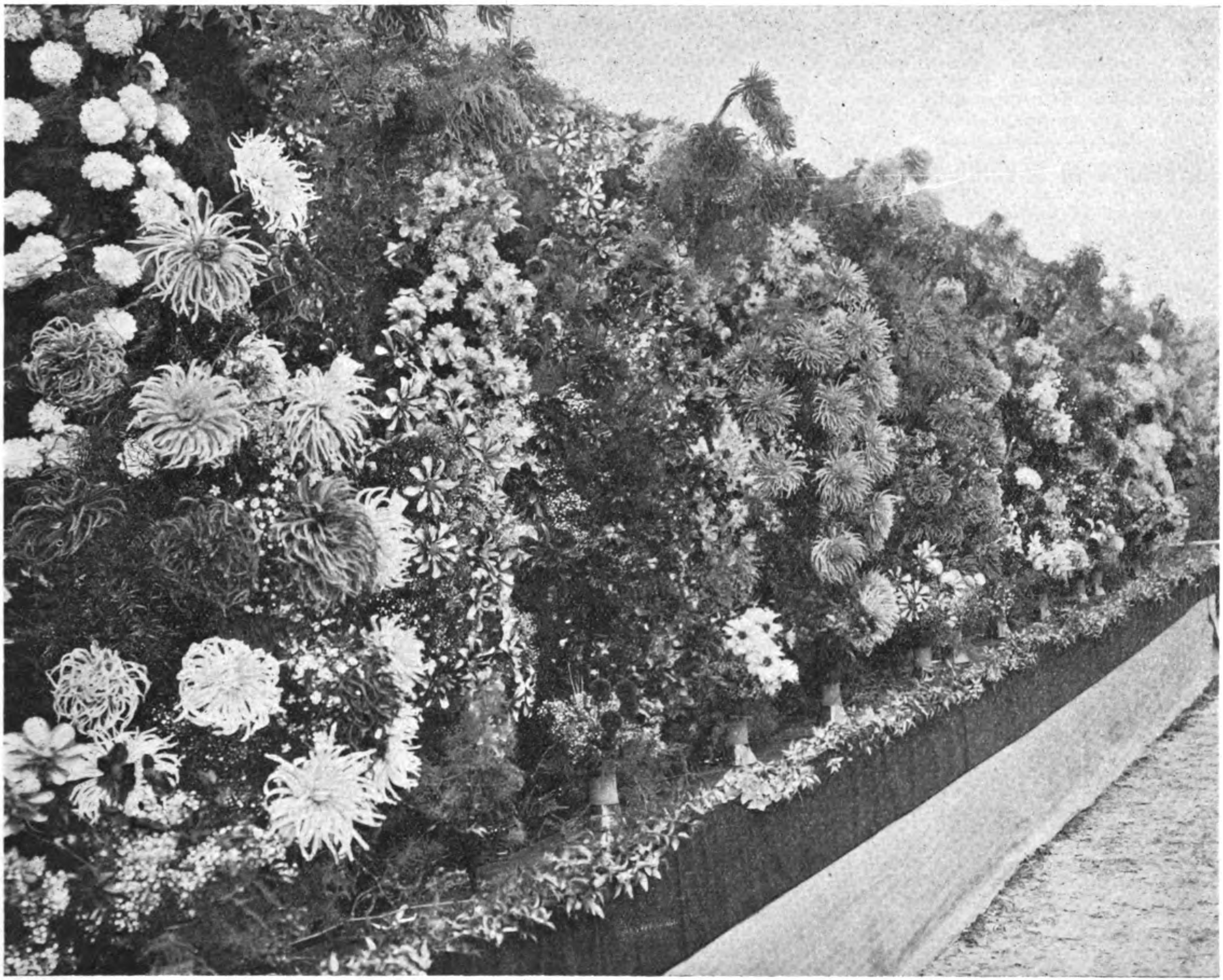


FIG. 70.—SOUTHPORT FLORAL FETE: MESSRS. DICKSON AND ROBINSON'S FIRST PRIZE COLLECTION OF DAHLIAS.

(See p. 156.)

occurs in a species isolated from Apples. The paper gave rise to an interesting discussion.

Mr. B. Barnes described the relation between a species of Acmosporium and Lachnea; the addition of scraps of paper to dung agar greatly favours the development of the Ascomycetous stage. It was suggested that the distribution of coprophilous fungi in nature may not depend so much upon the ascospores, many of which will germinate only after passing through the alimentary canal of an animal as upon the infection of dung by conidia from a stage of the fungus able to live on vegetable refuse. Further papers down for this session were "Citrus Exanthema in Western Australia," by Mr. Wickens, and "Spike Disease of Sandel," by P. S. Jivonna Ras Avl.

In the afternoon there was an excursion to Wisley Gardens. A large party was conducted round the gardens and laboratory.

(*To be continued*).

TALL PLANTS IN BEDDING SCHEMES.

Much may be done to vary the formal appearance of summer bedding by the use of tall plants standing above dwarf ones. There are numbers of flowering plants which are suitable for this purpose. I have tried the following subjects, mostly with success:—Ivy-leaved Pelargoniums, Zonal Pelargoniums, Heliotrope, Marguerite, Calceolaria amplexicaulis, Streptosolen Jamesonii, Swainsonia and Fuchsia.

Most of these have proved successful though there is a difficulty in getting good standards of Zonal Pelargoniums. I have tried standard plants of Ivy-leaved Pelargoniums and find that the tops become too heavy unless they are trained to a wire frame, which some may think too artificial, I find that these plants give far more pleasing results when they are grown in the form of columns. Most of the plants enumerated may be grown either as columns or standards.

Heliotrope does well as a standard and by propagating cuttings at once it is quite possible to get fine standards by next June. Swainsonia and Streptosolen have done well with me in a sheltered corner, but I have not tried them in an open position. There has always been an ambition to try Plumbago capensis in this connection, but so far the opportunity has not occurred.

The method advised for Ivy-leaved Pelargoniums (the best variety for the purpose being Mme. Crousse) is to place three cuttings in a three-inch pot, root them and grow them along without division. The points should not be pinched out until the plants attain a height of about four feet. The growths should be tied fairly tightly to a central stake and the plants re-potted until they are placed in seven-inch pots, it being desirable to get them well rooted in this sized receptacle by planting out time. Heliotropes are grown so as to have a clear stem of three feet from the pot. Streptosolens grow less quickly, therefore in order to have good plants within the year it is necessary to root the cuttings in June, or be content with shorter standards. Standards of Calceolaria amplexicaulis should not be too tall.

A beautiful bed has been made of columns of Ivy-leaved Pelargoniums, standing at five feet apart, with dwarf plants of the same variety beneath and an edging of blue Ageratum. I have an idea that a better effect would be produced by using Nepeta Mussinii as an edging to standard Fuchsias; I have used Pentstemons with an edging of Violas. Those who wish to grow plants for this purpose should propagate the stock at once and grow the plants steadily. Standard Heliotropes furnish quite a lot of cuttings in the spring. *William F. Rowles, Gallows Hill, Sudbury, Suffolk.*

FRUIT GARDEN.

AUTUMN WATERING OF FRUIT TREE BORDERS.

A large percentage of Peach, Nectarine, Plum and Apricot trees on walls often fail to produce satisfactory crops owing to insufficient moisture at the roots during the so-called resting season.

The importance of thoroughly soaking the borders with weak liquid manure is not generally recognised by cultivators.

Those who have studied the somewhat complex nature and conditions of outside fruit growing know that the growth of the trees must be maintained and not stopped entirely, after the gathering of the crop, or bud dropping and split-stones will result.

Bud dropping is a source of worry and anxiety to many good gardeners who have under their charge walls clothed with Peach, Nectarine, Plum, Cherry and Apricot trees, and I feel convinced this trouble is brought about by lack of water at the roots in autumn and winter.

My suggestion is to fork over the border lightly and use the hose for a couple of hours, or pour about fifty gallons of liquid manure water about the roots of each tree. This applies to trees covering a large area of wall. Smaller trees would not require quite such a large volume of moisture.

The next effort should be one that will assist the trees in the stoning period, viz., an application of lime in some form. After the first application of moisture fork into the border a fair sprinkling of bone meal; one need not be too precise as to quantity, but sufficient should be used to cover the ground, say about four ozs. to the square yard. A second watering two or three months later, or just before the blossom buds burst, will greatly benefit the blossoms and assist their fertilisation to a very appreciable degree.

Summer mulching is also one of the great factors in assisting the development of fine fruits, and conducive to high colour and rich flavour. *G. L.*

HOME CORRESPONDENCE.

Cassia corymbosa.—Where the conditions are favourable for its maximum development, the long, wand-like growths of this evergreen shrub are now crowded with clusters of golden Buttercup-like flowers. It is one of the brightest of autumn flowering shrubs. Generous treatment at the roots and pruning to within a few buds of the old wood are necessary for the production of strong, flowering shoots. The flowers are borne in upright, axillary, many-flowered corymbs, and are individually about one inch across. Cassia corymbosa requires a warm position, a sheltered, sun-baked spot, where the conditions most nearly approximate to those which obtain in its native Argentine. *F.*

The Carrot's Crimson Eye.—In *Gard. Chron.*, July 22, 1922, the above peculiarity of the Carrot was discussed in a most interesting leading article and the surmise was that the crimson eye was a relic from some former or ancestral form. A few days ago I observed colonies of some wild plant with reddish flowers in the aftermath of a hay field, on the western slopes of Russell Hill, Purley, and on closer inspection found them to be the wild Carrot. The crimson eye was there as usual, but every other flower of the umbel was of a dull rose colour. The ordinary white-flowered form was also present in great quantity, but the colonies of the rose-coloured form would indicate that it was reproduced from seeds. The maritime Carrot (Daucus gummifer) has all its flowers of a bright rose before they are fully expanded, the colour being external. *J. F.*

SOCIETIES.

GLASGOW AND WEST OF SCOTLAND.

September 2, 3, 4 and 5.—Finely organised, genius and skill materially assisting, the floral exhibition held in the Kelvin Hall, Glasgow, on the above dates, and promoted by the Glasgow and West of Scotland Horticultural Society in conjunction with the City of Glasgow Corporation, proved a great success. The entries, numbering 4,312, came from all over the Three Kingdoms, and the prizes aggregated in value over £1,500, besides many handsome trophies. It was a grand display, worthy of the second city of the Empire, and reflected the greatest possible credit on all concerned. Eclat was lent the opening day by the presence of H.R.H. the Duchess of York, who, accompanied by the Duke of York, gave a magnificent send-off to one of the finest floral exhibitions ever held in Glasgow. Beautiful weather—to which we have been strangers so long—also favoured the opening and following days, thus rounding off and completing the arduous labours and allaying the fears of the organisers. Mr. C. P. Hainsworth, General Manager, and Mr. J. Carrick Kerr, Secretary of the Society, with their large and very courteous staff of assistants, gave of their very best, and worthily earned the warm encomiums passed on their efforts.

Proceeding per schedule we inspected first the rock or rock and water gardens. The prizes offered were £40, £30, £20 and £10, and brought out a very keen competition. The landscape gardeners' art was seen here at its best in miniature. Messrs. Oliver and Hunter, Moniaive, secured premier place with an exceedingly fine conception, and one that has certainly never been bettered in Glasgow. Added pleasure was given the onlooker by the fact that all the plants in the large collection that went to make up the exhibit were named. The second prize was awarded to Mr. Campbell, Newlands, Glasgow, for a meritorious and well conceived scheme. Second and third prizes went respectively to Mr. Buist, Bridge of Weir, and Messrs. Laird and Dickson, Edinburgh, neither of whom had cause to feel otherwise than proud of their exhibits.

POT PLANTS.

This is a section of a horticultural exhibition that always pleases, and there was no exception to the rule on this occasion. For the best group of miscellaneous stove and greenhouse plants, arranged for effect on a floor circle, twenty feet in diameter, fronting all ways, there was keen competition, but the leading prizes, the Corporation Challenge Cup, and £40, and the £30 prize went to Mr. A. Holmes, Chesterfield, Derbyshire, for an exceptionally fine collection of Liliums, Codiaeums, Ixoras, and other greenhouse flowers and plants, arranged in pyramid fashion, with a finely grown Palm as a centre piece. Mr. T. M. Petch, Great Horton, Bradford, took second honours with just a little less meritorious entry.

Groups of stove and greenhouse plants, arranged for effect on the floor, were well shown, Mr. William Ferguson, Cambuslang, and Mr. James Templeton, Dowanhill, Glasgow, taking the leading places. Begonias were an outstanding feature in this section, and the plants forwarded from Newmilns and Bridge of Wier, by Mr Irvine and Mr. Robert Robertson, were greatly admired. The Marquis of Ailsa, Culzean, Maybole (gr. Mr. A. T. Harrison), won first prize for six pots of perpetual-flowering Carnations. Palms were not numerous, and first prizes went to Mrs. Alex. Rose, Richmond House, Dowanhill, Glasgow (gr. Mr. James Templeton). Mr. Peter McQuarrie, Woodside, Paisley, had matters pretty much his own way in the Orchid classes. Included in his collections were well-grown specimens of Cattleya Hardyana alba, C. Iris, C. Atalanta, Laelia tenebrosa, Odontioda Coronation, O. Bradshawiae, and Odontoglossum Colossus. These were much admired. Mr. McQuarrie also took the leading award for Dracaenas, his fine specimens of D. Sanderiana, D. Victoria, and D. Prince Manouk Bey having no compeers. Ferns made a very good show, Mr. W. J. McLeod, Mooredge, Carluke, led for six dwarf British ferns, with well-grown examples of Polypodium trichomanoides, Scolopendrium crispum crispissima, S. ramo-cristatum, S. capitatum, S. vulgare var. Coolingii, and Polystichum divisilobium plumosum densum. Mr. G. F. Laurie, Bishopbriggs, Glasgow, and Mr. George Gray, Junr., Carluke, were also prominent in the Fern classes. Pelargoniums were well represented, Mr. C. A. Hamilton, Cochno Gardens, Duntocher (gr. Mr. David A. McVea), leading finely for zonals in flower, with Mr. T. Cameron, Motherwell, sharing the other first prizes. Mr. Robert Allan, Adelaide, Glasgow, had won prizes for two Fuchsias (distinct varieties), and one Fuchsia, his big, fine, well-grown, bushy plants being much admired. Liliums, distinct, and L. auratum were well shown, Mr. George Bowmaker, Glasgow, leading with one pot of Lilium auratum, Mr. R. S. Smith, Bishopbriggs, for two pots of Liliums, distinct, and two pots of Lilium auratum, and Mr. Thomas Nelson, Rutherglen, for one pot Lilium (auratum excluded). Altogether this section provided an exceedingly fine display.

Cut Flowers.

This section provided a wealth of colour, variety and beauty. Messrs. Samuel McGredy and Son, Portadown, Ireland, gained the Lady Weir of Eastwood Challenge Cup, with a magnificent collection of Roses; the flowers were shown literally in stacks, and were most skilfully arranged. The outstanding specimens included fine examples of Golden Emblem, Mrs. H. Stevens, Admiration, Una Wallace, Queen Alexandra, and Mrs. H. Balfour. This firm was also first for six baskets of decorative Roses. Messrs. Fairley and Son, Cairneyhill, Fife, led for cluster Roses, and Messrs. Thomas Smith and Son, Stranraer, were first for forty-eight blooms in not fewer than thirty-six varieties. Included in this entry were some fine examples of the hybrid tea Roses Charles K. Douglas, Dr. O'Donel Brown, Ethel Somerset, George C. Waud, Gladys Holland, Gorgeous, Los Angeles, Madame Jules Bouche, and Mrs. Ambrose Riccardo, while of hybrid perpetuals the finest were Frau Karl Druschki, Her Majesty, and Mr. Hugh Dickson.

Mr. William Ferguson, Dunfermline, showed some very fine twelve blooms of any red Rose, but it was Messrs. Smith and Son, along with Mesers. McGredy who scored best here. Lady Cowdray, Dunecht, Aberdeen (gr. Mr. William Smith), had a very fine set of twelve blooms, distinct varieties, and among others worthy of mention were Mr. D. Murchison, Kirn; Mr. John Neaves, Monkton; Mr. R. R. Wardrop, Cumnock; Mr. John Prosser, Newton Mearns, and Mr. Alex. McLean, Helensburgh. True, the effects of adverse weather were visible in this section, the disfigured leaves telling their own tale, but that did not detract much from the general effect.

The exhibits in the Sweet Pea section were very good, but there was no denying the bad weather effects; they were palpable. Mr. John A. Grigor, Duff House, Banff, whose fine record this year at all the leading Scottish shows has been remarkable, was again, as in August last, at the Scottish Sweet Pea Show in Glasgow, the leading prize winner. His twenty-four vases of Sweet Peas, which gained the first place, included very fine examples of Matchless, Barbara, Annie Ireland, Tangerine Improved, King Manoel, and Hebe. For the best dozen vases of new Sweet Peas, distinct varieties, Mr. Grigor's was a capital win. It included Wild Rose, Daffodil, Grandeur, Royal Sovereign, Charming, Mary Rose, and Powerscourt, all of outstanding merit. He was also first for eighteen vases, distinct varieties, his set including well-grown examples of Dignity, Royal Cherry, Valentine, The Sultan, R. F. Felton, Edna May Improved, and Hebe. Mr. Grigor thus gained the chief honours in the four most severe classes in the Sweet Pea section.

Messrs. Torrance and Hopkins, Busby, carried off the silver cup presented by Messrs. Malcolm Campbell, Ltd., for the best collection of Sweet Peas artistically arranged on a space twenty feet by four feet, any foliage and Gypsophila allowed, with a superb entry. Notably fine in the collection were the specimens of Mauve Queen, Fair Lady, W. J. Unwin, and Powerscourt.

The entries for Carnations were not very numerous, but many possessed outstanding quality. For the best collection of perpetual Carnations, artistically arranged on a space fifteen feet by four feet, facing one way, Mr. C. Englemann, Saffron Walden, had a worthy win. The prizes here were well distributed, noteworthy exhibits coming from Messrs. Malcolm Campbell and Son, High Blantyre (border Carnations or Picotees), Mr. William McCarrol, Doune (Perpetual Carnations), Mr. William G. Griffin, Port Glasgow (border Carnations, selfs, and white-ground fancies), and Mr. Matthew M. King, Galston (yellow-ground fancies).

Nowhere was the effects of the bad weather more marked than in the section for Chrysanthemums. The Scottish competitors were nowhere compared with their English brethren. The southern entries were full-flowered and strong, whereas those from the northern side of the border were decidedly immature. That well-known grower, Mr. H. Woolman, Shirley, Birmingham, led with a capital collection of early Chrysanthemums, artistically arranged on a space twenty feet by four feet, facing one way. Especially fine were his specimens of Minstrel, a beautiful dark crimson, and Early Glow, a light bronze. The other most prominent winners in this section included the names of those doughty growers, Mr. Thomas Nelson and Mr. Robert Dunlop, of Rutherglen; Mr. G. Robertson, Thornliebank; Mr. W. P. Blyth, Busby; Mr. R. R. Wardrop, Cumnock; Messrs. Torrance and Hopkins, Busby; Mr. J. McKinnon, Mauchline; and Mr. C. Jenkins, Cambuslang.

Some very fine exhibits of hardy flowers were arranged on a space twenty-five feet by six feet, that sent in by Messrs. G. Graham and Company, Bedale, being greatly admired, and worthily earning chief place. Mr. G. Robertson, Thornliebank, Mr. James Currie, Mauchline, and Mr. Peter Skellon, Eaglesham, distinguished themselves in this section. Mr. Currie secured a leading award for flowers cut from the open border.

There have been better displays of Dahlias at Glasgow, and the rather inferior entries on this occasion have to be attributed to the weather. Again the English growers had the best of it. Mr. H. Woolman, Shirley, Birmingham, put up a fine collection of Dahlias artistically arranged on a space twenty feet by four feet, and easily secured the leading honours. Nevertheless, when all is said and done, some wonderfully fine entries were sent in by Messrs. Peter Skellon, Eaglesham; Mr. R. Grant, Bo'ness; Messrs. George Mair and Sons, Prestwick, and Mr. W. B. Montgomerie, Chryston.

Gladioli were exceptionally good. Messrs. George Mair and Sons, Prestwick, led with a superb collection comprising twelve vases, three spikes in each (excluding Primulinus varieties). Mr. Smellie, the worthy secretary of the Scottish Sweet Pea Society, came out in a new role in this section, and won first place for Primulinus Gladioli, with a really fine entry. Included in the collection were very fine samples of Maiden's Blush, Attalia, Latonia, Golden Elsie and Atalanta. Mr. David Airdrie, Crawford, and Mr. Robert Pollok, Ayrshire, also showed some fine flowers.

Pentstemons, Antirrhinums, Phloxes and Marigolds, were well to the fore, the leading prizes being taken by Messrs. Wotherspoon, Kirkmuirhill; Wm. Johnstone, Crossmyloof; J. Blacklock, Blair-Drummond; Wm. McWhinnie, Kilsyth; and J. Crawford, Falkirk. Asters formed a delightful display, those in the front rank being shown by Mr. C. Jenkins, Mr. J. R. Paterson, Gargunnock, and Mr. John Neaves, Monkton. There was a wonderfully good display of Pansies and Violas, the entries from Mr. Wm. Tennant, Harthill; Mr. James Paul, Killearn; and Mr. Thomas W. Wilson, Neilston, being much the best.

Genius, skill and taste were finely blended in the decorative classes. For the best florally decorated dinner table, nine feet by four feet, to be judged for artistic and effective arrangement, there were very fine entries. But why do some competitors persist in overloading their exhibits: quantity, be it noted, does not imply quality. It is safe to say the first-prize table here, shown by Mr. Robert J. Dunlop, Barskimming, Mauchline (gr. Mr. James Currie), could have been decorated in two minutes, provided the material were at hand. Lightness and airiness were the keynotes, and the effects were extremely pleasing. Mrs. M. L. MacKinnon, Auchmore, Killin (gr. Mr. John G. Carson), was a good second, while Mr. T. M. Petch and Mrs. M. Rollinson, Saltcoats, were third and fourth respectively. Bride's and bridesmaid's bouquets were not numerous but the quality was exceedingly good. Here, again, the fine effects produced by having every individual flower standing out amid lightsome and airy surroundings were most effective. Miss G. P. Campbell, Dumbarton; Mr. A. Buchanan, Dean House, Helensburgh (gr. Mr. Adam R. Holmes), and Mrs. Davidson, Langbank, were worthily placed in the order given. Miss Campbell and Mr. A. Buchanan shared the chief honours for shower bouquets, the winning bouquet composed of Roses sent in by the last-named being greatly admired. For shower bouquets of Sweet Peas and Carnations, the first-prize entries came from Dean House. Altogether this was a greatly appreciated section, the arrangements of the Roses, Sweet Peas, Carnations and autumn foliage and berries evoking hearty admiration.

Fruit.

Nothing finer as a fruit section has been seen at Glasgow this season. The leading feature was the best decorated fruit table, consisting of a collection of twenty-four dishes of fruit, not less than seven distinct kinds, on a space measuring twelve feet by six feet. There were four entries for the blue riband in this section. The Earl of Balfour, Whittingehame (gr. Mr. G. T. Anderson), had a great victory here, his entry gaining $198\frac{1}{2}$ points compared with $165\frac{3}{4}$ points given to the second collection. In the leading collection were capital bunches of Black Hamburgh, Appley Towers, Alicante and Muscat of Alexandria Grapes; James Grieve, Peasgood's Nonsuch and Gascoygne's Scarlet Apples; Royal George Peaches; Elruge and Newton Nectarines; William's Bon Chretien Pears; and Emerald Gem Melons. Along with the first prize of £25 there went the beautiful *Glasgow Herald* Challenge Cup. As this is the third time in succession the cup has gone to Whittingehame it now becomes Mr. Anderson's own property. Mr. Walter Currie, Castle Leven, Greenock (gr. Mr. Charles Traill), proved a good second; third and fouth prizes went to the Marquis of

Ailsa, Culzean, Maybole (gr. Mr. A. T. Harrison), and Viscountess Cowdray, Dunecht, Aberdeenshire (gr. Mr. William Smith).

For the best collection of nine dishes of fruit, distinct varieties, Lord Belper, Kingston Hall, Derby (gr. Mr. J. McCartney), had a specially fine first prize set; Mr. H. S. Gladstone, Thornhill, Dumfries (gr. Mr. D. Cameron) was second, and the Marquis of Ailsa, third. The Earl of Strathmore, Glamis Castle (gr. Mr. D. McInnes), led finely for Grapes, the entry being considered one of the finest ever seen in Glasgow. Along with the class prize of £12 there also went to Glamis the Gold Medal of the Society for the best eight bunches, and the Bronze Medal for best four bunches. Other prize-winners in these classes included Mr. David Airdrie, Mr. Henry Begg, Rothesay; Mr. E. McLaren, Hexham, and Mr. S. Gordon, Whaupmill.

Pears were not numerous, but the best were those from Viscountess Cowdray, Lord Belper, and Mr. A. McLeod, Gifford, the latter leading for Marguerite Marrilat, Pitmaston Duchess, Souvenir du Congres and William's Bon Chrétien. Apples proved a very fine display, Viscountess Cowdray, Mr. Walter Currie, Leven Castle, and Mr. D. Airdrie, Crawford, taking the premier honours. Plums were not so good as have been seen here, but Apricots were exceptionally fine.

Vegetables.

The vegetables provided a most commendable section, some capital specimens being shown. Mr. J. Gray, Uddingston, who was also awarded the Lord Maclay Challenge Cup for the best collection of vegetables, was an outstanding winner, his exhibits showing not only quantity but very fine quality. He took first places for two best collections of vegetables, his winning entries being staged side by side. They comprised Arran Comrade Potato, Winningstadt Cabbage, Intermediate Carrot, Golden Ball Turnips, Perfection Beans, Table Dainty Marrow, Cranston Onion, Everyday Cucumber, Lyon Leek, All-the-Year-Round Cauliflower, Gladstone Pea, Selected Parsnip and red Celery. Both formed capital displays and were greatly admired, especially from the utilitarian point of view.

Potatos, however, were the finest feature. Some exceptionally fine, well grown, beautifully shaped tubers were shown in all the classes. Mr. R. A. Grigor, Dumfries, Mr. J. Loan, Coldstream; Mr. S. Scobie, Dailly; Mr. D. Smith, Cumnock; Mr. J. Gray, Uddingston; Mr. J. Currie, Mauchline; Mr. J. Inglis, Bridge of Weir, and Mr. D. MacKay, Rutherglen, were conspicuous prize winners in the Potato classes. Cauliflowers, the favourite variety being All-the-Year-Round, were well shown. Winningstadt and Drumhead varieties of Cabbages made a good show, as also did Savoys, Greens, Leeks, Onions and Celery.

Amateurs and Allotment Holders.

These classes were well catered for, and the Show authorities must have felt themselves amply repaid by the fine response made and the capital entries sent in by these enthusiasts. There was just one grumble to be heard—the allotment holders' efforts were confined to vegetables only, but some of them felt they might also have classes for flowers. That may be remedied in future.

Trade Exhibits.

The non-competitive displays sent in by the leading growers and seedsmen from different parts of the country were simply superb. It would require an entire issue of *The Gardeners' Chronicle* to do anything like justice to the skill, taste and genius, not mentioning the financial outlay, displayed on all the stands.

Gold Medals for displays shown were awarded to Messrs. Hewitt and Co., Ltd., Birmingham; Messrs. Dickson and Co., Edinburgh; Messrs. Charlesworth and Co., Haywards Heath; Messrs. Dobbie and Co., Edinburgh; Messrs. Kerr and Co., Glasgow; Messrs. Kent and Bryden, Darlington; Messrs. Leighton and Co., Glasgow; the West of Scotland Agricultural College, Glasgow; Messrs. Bakers, Wolverhampton; Carse o' Gowrie Nursery Co.; Messrs. Daniel Bros., Ltd., Norwich; Messrs. J. and A. McBean, Cooksbridge, Sussex; Mr. T. Smith, Newry, County Down; Messrs. Sutton and Sons, Reading; Messrs. James Vert and Sons, Saffron Walden; Mr. John Forbes, Hawick; Messrs. R. K. Gemmell and Co., Glasgow; Messrs. Isaac House and Son, Bristol; Messrs. Lowe and Gibson, Sussex; Messrs. Sanders, St. Albans; Mr. W. Wells, jun., Surrey; Messrs. Reamsbottom and Co., Middlesex; Messrs. Laird and Dickson, Edinburgh; Messrs. Williamson and Co., Glasgow; and Messrs. Stewart and Lowe.

Decorative Exhibits.

Never, surely, have finer collections of pot plants, cut flowers and floral art been shown in Glasgow as those contributed by those firms whose names are household words in the horticultural world. First and foremost must be noted the great assistance rendered the Show by Mr. Edward Matthews, Superintendent, and Mr. William Besant, Assistant Superintendent, of Glasgow's magnificent parks. Their contribution, which took the form of a flower garden, was greatly admired. The firms noted above, to which must be added the names of Messrs. Austin and McAslan, Glasgow, founded in 1717, all gave of their very best, and the warm expressions of admiration heard on every side from the thousands of visitors who attended must have compensated in some measure for the time, labour and expense involved in providing such a feast of floral beauty.

ROYAL HORTICULTURAL.

September 9.—The proximity of the National Dahlia Society's Annual Show accounted for a large number of Dahlia groups at the fortnightly meeting of the Royal Horticultural Society, held at Vincent Square, Westminster, on the above date. In conjunction with this show the National Hardy Plant Society also held its first Gladiolus Show, and displays of this flower were also much in evidence.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Messrs. Gurney Wilson (Secretary), Jas. O'Brien, H. T. Pitt, Henry H. Smith, Arthur Dye, Fred K. Sander, H. G. Alexander, J. E. Shill, A. McBean, S. W. Flory, T. Armstrong, E. R. Ashton, Frederick J. Hanbury, Stuart H. Low and Charles H. Curtis.

Awards of Merit.

Cattleya Joyce Hanmer (*parentage unrecorded*), from R. Gerrish, Esq., Milford Manor, Salisbury (gr. Mr. Sorrell), a large and finely-formed flower of true Cattleya shape, with Cowslip-yellow sepals and petals. The well-rounded lip has a violet-crimson front and golden yellow disc, with red lines from the base.

Odontioda Juanita (*Oda. Brewii* × *Odm. Pharos*), from R. Gerrish, Esq. One of the darkest of the showy Odontiodas. The plant bore an upright spike of six well-formed flowers of a rich chestnut-red colour; the lip has a crimson shade and a yellow crest.

Sophro-Laelio-Cattleya Isabella var Vivid (*S.-L.-C. Marathon* × *C. Fabia*), from H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood). A large and finely-formed flower with broad petals and sepals of salmon-pink colour. The well formed lip is ruby-crimson in front with dark lines running into the yellow centre.

Laelio-Cattleya Vega (*Rubens* × *Soulange*), from Messrs. J. & A. McBean, Cooksbridge. A large flower of model form with rosy-mauve sepals and petals and broad crimson-purple lip with yellow disc.

Brasso-Laelio-Cattleya J. M. Black (*L.-C. Firminii* × *B.-L.-C. The Baroness*), from Messrs. Flory and Black, Slough. A very fine hybrid well worthy to rank with the yellow Brasso-Laelio-Cattleyas of this section emanating from Baron Bruno Schroder's collection. The flower, of perfect form, was clear Buttercup-yellow with ruby-purple markings on the front of the lip.

Groups.

A Silver-Gilt Banksian Medal was awarded to R. Gerrish, Esq., Milford Manor, Salisbury, and a Cultural Commendation to his gardener, Mr. Sorrell, for a fine group of rare hybrids; every plant in the exhibit was grown to perfection. In addition to those which gained awards there were two finely grown plants of Odontoglossum crispum Hesperus, fine examples of the white-petalled forms of Cattleya Hardyana and C. Hassallii; C. Boadicea, of very rich colour and fine shape; C. Celia and other white varieties; the rich yellow C. Aeneas; richly coloured forms of Laelio-Cattleya Soulange and L.-C. Maqueda; a noble form of Odontioda Zenobia, probably the best yet shown; and other Odontiodas and Odontoglossums.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), was awarded a Silver Banksian Medal for an interesting and varied group containing a good collection of showy hybrids, including his Sophro-Laelio-Cattleya Pervandiela and hybrid Cattleyas, in which was noted the showy C. bicolor cross C. Ella. The group contained a number of interesting plants, including Brassia Lawrenceana longissima, Habenaria rhodocheila with orange-scarlet flowers, Cycnoches chlorochilon; a selection of Bulbophyllums, including the rare B. mirum and B. barbigerum; Oncidium Papilio, species of Miltonia, a selection of species and hybrids of Masdevallias, and various Cypripediums.

Sir Jeremiah Colman, Bt., Gatton Park, Reigate (gr. Mr. Collier), staged a selection of Orchids of botanical interest, including a finely-marked form of Bulbophyllum Dearei, B. barbigerum with its sprays of "feather-tipped" flowers, Masdevallia velifera and M. myriostigma and a singular little Octomeria.

Messrs. Sanders, St. Albans, staged a good selection of Orchids. Cattleyas included C. Judah var. Gloria Mundi (Hardyana × Lord Rothschild), one of the finest Cattleyas raised originally at Westonbirt; it is a noble flower of true Cattleya form with violet-purple sepals and petals, the base of which is white, and it has a crimson-purple lip. Other good Cattleyas were Veronicas Beltona and Sybil, and among the Lælio-Cattleyas were fine forms of Soulange and Mrs. T. Ward. A selection of rare species was also shown.

Messrs. J. and A. McBean, Cooksbridge, showed Laelio-Cattleya Profusion var. Celtic a very fine flower of rich colour, and a plant of Odontoglossum crispum regalis, with many fine white flowers, which had occasional dark blotches on the sepals.

Messrs. Stuart Low and Co., Bush Hill Park and Jarvisbrook, Sussex, sent their new Brasso-Laelio-Cattleya Eileen Low (L.-C. Henry Greenwood × B.-C. Digbyano Trianae), the plant having two very large flowers of fine form and of rosy-mauve colour with broad Tyrian purple lip with a yellow disc; Laelio-Cattleya Ortega var. Sunset, light chrome-yellow with crimson-purple markings on the lip, and Cattleya Suavior, Low's variety, a very showy form with purple markings on all the segments.

Floral Committee.

Section A.—*Present:* Messrs. H. B. May (in the Chair), D. B. Crane, Chas. E. Pearson, W. Stephens, W. B. Gingell, J. B. Riding.

Andrew Ireland, M. C. Allwood, E. R. Janes, W. Howe, D. Allan, and W. Cuthbertson.

Section B.—*Present:* Messrs. Gerald W. Loder (in the Chair), G. Reuthe, G. Harrow, R. W. Trotter, C. E. Musgrave, Reginald Cory, G. Yeld, T. Hay, Amos Perry, F. G. Preston, W. G. Baker, and W. B. Cranfield.

AWARDS OF MERIT.

Hibiscus Waimeae.—This exquisitely beautiful species has large flowers of an extremely pale silvery blush colour which seems white at a short distance away. The staminal lobe, nearly six inches long, is greenish white at the base and crimson at the apex. The stamens are also red and the anthers of a deep red-brown colour. The neat calyx is quite green. The leaves are broadly oval, deep green, prominently veined, with crenate margins. Shown by the DIRECTOR, Royal Gardens, Kew.

Helenium Mrs. Bradshaw.—An interesting and handsome variety evidently derived from H. striatum, but it has larger and more substantial flowers in which the florets are often half-an-inch broad at the circumference of the bloom. The colour is deep, rich brownish crimson, but rather more red in its general effect than this description suggests. In the sunshine this variety is very effective. Shown by Mr. AMOS PERRY.

Chrysanthemum Sunburst.—A golden, orange-tinted, early-flowering variety of good Japanese form; the blooms are carried on long, stiff, dark stems, and the foliage is very neat and dark. A very attractive variety.

Chrysanthemum Bronze Early Buttercup.—In this large, early-flowering variety the blooms are of loosely incurving form; indeed, in form it approximates to the type known as incurved Japanese. As shown the flowers were of somewhat soft texture, but this may have been due to weather.

Chrysanthemum Australian Gold.—A showy early-flowering variety, with blooms of good size and substance; the florets are slightly cupped but spread out well as the bloom expands. The colour is bright old gold. These three Chrysanthemums were shown by Mr. H. WOOLMAN, Shirley, Birmingham.

GROUPS.

The exhibits of hardy flowers were numerous and Mr. AMOS PERRY staged a large display just inside the entrance. Noteworthy plants were Helenium Mrs. Bradshaw, rich coppery red and very large flowers; Lythrum Lady Sackville, with large spikes of rose-purple flowers, and Liatris pycnostachys, rose-lilac (Silver Banksian Medal). Messrs. SCOTT AND WICKAM again showed their new border Chrysanthemum Phoenix, of bright bronze colour (Silver Banksian Medal). Messrs. H. B. LADHAMS, Ltd., had a group consisting principally of hybrid Lobelias in a wide range of colours (Bronze Banksian Medal). Mr. W. YANDELL staged a number of Violas (Bronze Banksian Medal), and Michaelmas Daisies and Pentstemons were shown by Mr. F. G. WOOD (Bronze Banksian Medal).

Messrs. ISAAC HOUSE AND SONS brought a collection of varieties of Scabiosa caucasica in shades of blue and white (Bronze Banksian Medal), and, Mr. J. J. KETTLE had a small group of Violets.

Delphiniums were shown by Mr. T. CARLILE (Bronze Banksian Medal), and a display of Anemone St. Brigid was staged by Messrs. REAMSBOTTOM AND CO.

Messrs. RICH AND CO., staged Phloxes in variety.

Messrs. J. CHEAL AND SONS, LTD., staged berried and flowering shrubs chief of which were Viburnum rhytidophyllum in fruit; Leycesteria formosa; Berberis Giraldiana with black fruits; and Euonymus latifolius (Silver Banksian Medal). Messrs. L. R. RUSSELL, LTD., exhibited well-grown pot specimens of Clematis edged with evergreen and berried shrubs (Bronze Banksian Medal).

Border Chrysanthemums were exhibited in fine condition by Messrs. KEITH LUXFORD AND CO., who showed large epergnes of Perle Chatillonaise, blush-pink; September Yellow; Mary Mason, wine colour; and John Bannister, buff-yellow (Silver Banksian Medal). The Rev. J. H. PEMBERTON had a small group of Roses, many of which were of his own raising (Bronze Banksian Medal).

Messrs. R. H. BATH, Ltd., had a comprehensive display of Gladioli, chief of which were Alice Tiplady, rich salmon; Pink Perfection; Fire King, scarlet; and Chris, crimson (Silver Banksian Medal). Mr. VELTHUYS, Hillegom, Holland, staged in a very attractive manner baskets of Gladioli represented by large-flowered spikes. Pink Perfection, White Giant, Prof. Ribbins, scarlet, and Meilust, pink with scarlet blotch, were a few of the outstanding varieties (Silver Banksian Medal).

Messrs. W. ARTINDALE AND SON had a most attractive display of Gladioli which occupied a whole length of a double width of tabling. The flowers were arranged in baskets and epergnes set at different levels, and Asparagus fronds, double Gypsophila and tinted oak foliage were effectively employed with the flowers. Of the many varieties Maréchal Foch, pink; Willy Wigman, white ground with crimson blotch; White Giant, and Brimstone, creamy white, were shown in good condition (Silver-Gilt Banksian Medal).

Just opposite, Messrs. J. KELWAY AND SON staged a large number of vases of Gladioli, the varieties W. G. Fitzgereld, violet with white blotch; Lady C. Combe, deep cream, and Edward VII., being of great merit (Silver-Gilt Banksian Medal). Messrs. LOWE AND GIBSON also staged a large number of seedling Gladioli (Silver Banksian Medal), and Mr. ALFRED EDWARDS was also responsible for a group of Gladioli arranged in golden wicker baskets and bowls. Of the Primulinus varieties Lord Nelson, Ethel and Topsy were very fine (Silver Banksian Medal).

Mr. W. VAN DE WEYER, Clyffe, Dorchester, once again showed flowers of his hybrids between Buddleia globosa and B. variabilis. Two splendid spikes of the handsome Buddleia Colvillei were shown by the DIRECTOR OF THE ROYAL GARDENS, Kew.

Perpetual-flowering Carnations were displayed by Messrs. STUART LOWE AND CO. (Bronze Banksian Medal). Messrs. ALLWOOD BROS. (Silver Banksian Medal), and Mr. C. ENGELMANN (Bronze Banksian Medal), while Messrs. R. and G. CUTHBERT staged a batch of the brightly coloured Nerine Fothergillii major together with cut blooms of Streptocarpuses (Silver Banksian Medal).

Joint Dahlia Committee.

Present.—Messrs. H. B. May (in the Chair), H. J. Jones, D. B. Crane, J. Cheal, W. Stephens, J. B. Riding, A. Vasey, J. Emberson and John Green.

The following varieties were selected for trial at Wisley:—

Secretaris Voors. — A most conspicuous Decorative variety with well-shaped blooms of orange-yellow colour suffused with mauve

Emma Groot.—This Decorative variety is of large size of deep lilac-purple colour. This and the foregoing variety were shown by Mr. J. G. BALLEGO, Leiden, Holland.

Mening Carlée.—A superior, pure white Decorative variety. The bloom is well formed and carried on a long, elegant stem.

Mr. John Dix.—Another charming Decorative variety of silvery-pink colour.

Mrs. Euchedé Kooy.—An enormous Decorative variety with its perfectly formed blooms of deep amber-yellow colour. This and the above varieties were shown by Mr. H. CARLÉE, Heemstede, Holland.

John Mensing.—Of rich scarlet colour, this Decorative variety is of excellent form. Shown by Messrs. TOPSVOORT, Aalsmeer, Holland.

Mrs. Skevington. A medium-sized, Paeony flowered variety having two rows of petals. The colour is bright orange-scarlet tinged with mauve. The bases of the florets are conspicuously marked with yellow, which, together with the bright orange-yellow of the stamens, gives the flower a sun-ray effect. Shown by Mr. A. J. COBB, University College, Reading.

DAHLIA GROUPS.

Messrs. SUTTON AND SONS had a very attractive exhibit staged in admirable style. The blooms were all produced from plants raised from seeds sown at the end of March. There was a column of flowers raised from selfed blooms of Coltness Gem, showing very little divergence in colour, and single, decorative, and pompon varieties were all represented by fine flowers in rich pure colours (Silver-Gilt Banksian Medal). THE UNIVERSITY COLLEGE, Reading (Horticultural Department) contributed a bright group of Dahlias arranged with ornamental foliage. Sweet, a single pink flower; Reading Star, rich crimson; Hilda D. Wheeler, a Paeony-flowered variety of glowing salmon-buff colour; and St. Davids, a miniature Paeony-flowered variety with bright crimson-red flowers were a few of the more modern introductions. (Silver-Gilt Banksian Medal).

Messrs. CARTER PAGE AND CO., Ltd., staged Dahlias in splendid condition, Peerless (yellow Cactus), Apple Blossom (blush Decorative), Trixie (scarlet Single), and Aphrodite (white Paeony), being a small selection. (Silver Banksian Medal).

Mr. J. B. RIDING was also responsible for a bright group, the flowers being well arranged and not too cramped. Of Decorative varieties, Psyche, yellow; Vesuvius, scarlet; and Millionaire, lilac, with white centre, were of outstanding quality, while the other sections were also well represented by clean, well-grown flowers. (Silver Banksian Medal).

Messrs. DOBBIE AND CO. had a magnificent display consisting solely of Collerette varieties, the flowers being of exceptional quality and tastefully arranged in bowls and tall epergnes. Arran, rose-purple with white centre; Scarlet Queen, scarlet and yellow; Goldendale, amber yellow; Glen Sannox, rich scarlet with yellow centre; and Glen Etive, scarlet, were particularly pleasing. (Silver-Gilt Banksian Medal).

THE NATIONAL DAHLIA SOCIETY OF HOLLAND brought a collection of the newer Dahlias raised by Dutch growers, including Mr. H. C. Dresselhuys (Decorative), with silvery pink flowers; Secretary Voors, a well-formed Decorative variety of orange-mauve colour; Maria Houtman (Decorative), amber yellow; and Murillo (Decorative), bright rose-pink.

Fruit and Vegetable Committee.

Present: Messrs. C. G. A. Nix (Chairman), J. Cheal, W. G. Lobjoit, H. S. Rivers, G. F. Tinley, S. B. Dicks, H. Prince, E. Neal, F. Jordan, A. Metcalfe, G. Woodward, E. Laxton, G. Reynolds, T. Pateman, W. H. Divers, P. C. M. Veitch, J. Harrison, E. A. Bunyard and A. N. Rawes.

Messrs. LAXTON Bros., Bedford, showed a number of new Apples and a new Pear. The latter, named Vanguard, is a cross between Doyenne d'Ete and William's Bon Chrétien; it is a fruit of pleasing appearance and possesses merit, but it was not considered so fine as Messrs. Laxton Bros.' new variety, Superb.

Mr. GEO. REYNOLDS brought from Gunnersbury Park Gardens two bunches of Grape Cote House Seedling. This is a white Grape with amber-coloured berries like the Muscat of Alexandria type, but the bunches are about the same size and shape as those of Black Hamburgh, and the berries are round as in that variety. The parents are said to be Black Hamburgh and Muscat of Alexandria; the quality is exceptionally good and there is a true Muscat flavour. Mr. Reynolds stated that the variety grows and fruits well without much fire heat, and it is as easily cultivated as Black Hamburgh. A deputation of the Committee was instructed to inspect the vines as to their cropping capacity, vigour, etc.

Mrs. Reed, Devizes Castle, Devizes, Wiltshire (gr. Mr. E. E. Thayer), showed a large exhibit of Grapes which included the varieties Mrs. Pince, Lady Downes Seedling, Appley Towers, Mill Hill Hamburgh, Black Alicante and Madresfield Court of black sorts, and Ryton House Muscat and Muscat of Alexandria of the Muscat type. (Silver Hogg Medal).

NATIONAL HARDY PLANT.

September 9.—In conjunction with the fortnightly meeting of the Royal Horticultural Society, held at Vincent Square on the above date, the National Hardy Plant Society held its first Gladiolus show, and it was gratifying to see that the classes attracted good competition.

The class for nine spikes of named Gladioli (excluding Primulinus varieties) attracted four competitors and the first prize was deservedly awarded to Messrs. Lowe and Gibson, Crawley Down, who displayed clean bold spikes of Scarlet Princeps, Master Wietze, Sir E. Carson, Anna Eberius, King George, and Byron E. Smith. Mr. W. Kitchener, Hitchin, and Messrs. Artindale and Son, Sheffield, were second and third respectively.

Major G. Churcher, Lindfield, Sussex, led in a similar class for six spikes and showed wonderful blooms of A. W. Hunt, Byron L. Smith, and Asiatic; Messrs. Lowe and Gibson were second and Messrs. W. Artindale and Son followed third. Major G. Churcher also excelled in the class for three red Gladioli (excluding Primulinus varieties), his selection being A. W. Hunt, Neoga, and Gypsie Queen. The second prize went to Mr. W. Kitchener and the third to Messrs. Lowe and Gibson

The last named competitors led in the class for three white varieties, with spikes of Princely, Albania, and White Giant, while in the class for three spikes of flowers other than red or white, Major G. Churcher took leading honours with Gold, Gertrude Errey, and The Pearl.

There were five exhibitors in the class for six spikes of named Gladioli (excluding Primulinus varieties), not fewer than four varieties and not more than two spikes of any one variety. The first prize went to Messrs. D. Prior and Son, Ltd., Colchester, who showed Pink Perfection, Chris, and America in good form. Mr. S. H. Gregg, Bowes Park, London, N., was second and Mr. A. E. Amos, Colchester, third.

In the single spike classes Mr. A. E. Amos led for a red variety with President Carnot, and the same exhibitor was also successful in the classes for a white variety with White Giant and the blue variety with Baron Hulot. In the class for one spike of any other colour Messrs. D. Prior and Sons, Ltd., were first with Pink Perfection.

In the classes devoted to Primulinus varieties, the prize for nine distinct varieties, three spikes of each, was won by Messrs. Lowe and Gibson, who staged Scarletta, Alice Tiplady, Capella and Sunrise in good condition. Messrs. Artindale and Son and Mr. A. Edwards, Ely, were second and third respectively. In a similar class for six varieties Major G. Churcher was first with a magnificent half-dozen, Cassandra, Alice Tiplady and Perseus being particularly outstanding. Messrs. Lowe and Gibson were second, and Messrs. W. Artindale and Son, third.

For three distinct varieties (one spike of each), Mr. A. E. Amos was first, followed by Mr. S. H. Gregg and Mr. A. Amos, while in the class for three varieties of Gladiolis raised by the exhibitor, Major G. Churcher was the most successful exhibitor and gained the Society's Silver-Gilt Medal with his trio of seedlings remarkable for their dainty colouring. Messrs. Lowe and Gibson were second.

In the decorative class for a bowl of not more than two Primulinus varieties, Miss P M. Churcher, Lindfield, Sussex, secured the first prize with a combination of yellow and deep orange-salmon flowers, mixed with Gypsophila flowers and Beech foliage. Miss N. J. Churcher, Lindfield, was second.

DUNDEE HORTICULTURAL.

August 28, 29, and 30.—The annual Floral Fete of this Society was held on the usual venue, Magdalen Green, Dundee, on the above dates. The quality of the exhibits was not quite up to the fine standard seen here in past years, owing to the unfavourable season. Nevertheless, it was a most admirable display, and demonstrated what can be done by Scottish gardeners under the most adverse circumstances. Lady Maud Carnegie performed the opening ceremony.

There was a fine tussle for the blue riband of the show—the Corporation Challenge Cup—offered for the best six bunches of Grapes, in not fewer than three varieties arranged on a table six feet by four feet by two feet high; foliage or flower was permissible, The two outstanding entries were from the Earl of Strathmore, Glamis Castle (gr. Mr. Donald McInnes), and the Earl of Airlie, Cortachy Castle (gr. Mr. J McFadyen). The judges, it was evident, had some difficulty in placing the ultimate winner. The beauty and quality of the Glamis Castle entry, however, decided the matter, and the Cup went to it. In decorative value the entry from Cortachy Castle, which gained second place, was far and away superior to that shown from Glamis. The third prize was won by Mr. D. Beats, Fernbrae, Dundee.

There was keen competition in the professional classes for Plants in Pots, and the outstanding feature was the superb entries from Miss Gibson, Invertay (gr. Mr. George H. Reid), who won no fewer than nine first and three second prizes. Mr. J. Margach, Seafield Lodge Gardens, Broughty Ferry, proved a capital runner-up, winning leading honours in five classes. There were also excellent entries from Mr. W. D. Grieve, Hazelwood; Mr. T. C. Brown, Balcairn, and Mr. J. Dick, Lismore, Broughty Ferry.

The displays of fruits were very meritorious ones. Sir Thomas Erskine, of Kingsbarns (gr. Mr. John Laing), won several prizes. The Earl of Strathmore led for Grapes but was very closely followed by the Earl of Airlie. The two bunches of Muscat of Alexandria from Glamis were much admired for their size, quality and fine finish, but Grapes from Cortachy Castle were also very fine. The Plums shown this year were far below the usual numbers, but what there were were good. Other outstanding exhibitors in the fruit section were Mr. J. Stewart, Woodhaven, Loughborough; Mr. Robert Duncan, Old Montrose; Mr. William Benvie, Broughty Ferry, and Mr. James Benvie, Inchture.

Vegetables were well shown. In the professional classes the leading prizes were won by Mr. D. Beats, Fernbrae, Dundee; Mr. J. Dick, Lismore; Mr. J. M. Robertson, Leuchars; Mr. W. Philip, Forfar, and Mr. W. Philp.

Non-Competitive Stands.

Especially fine exhibits were shown by nurserymen, seedsmen and florists of Dundee and surrounding district. Messrs. D. and W. Croll staged a magnificent collection of Roses for which they were awarded a Gold Medal. A similar honour was also given to the firm for a very fine collection of vegetables. Messrs. W. Laird and Sinclair, Ltd., High Street, Dundee, showed some fine novelties, including "Le Flamboyant," a plant which, apart from its richness of colouring, is likely to prove popular for bed, basket and pot culture. Messrs. Harley and Sons, Covent Garden, had a most artistic display. A fine collection of herbaceous plants and other exhibits were shown by Messrs. Thyne and Son, Dundee, for which a Gold Medal was awarded. Messrs. Laurie and Son, Blackness Nursery, had a rock garden with waterfall and were awarded a Gold Medal. Messrs. Storie and Storie, Glencarse Nursery, displayed a fine collection of pot fruit trees, all in bearing, and other exhibits.

Obituary.

Mrs. W. H. Matthews.—We regret to learn of the death of Mrs. W. H. Matthews, wife of Mr. W. H. Matthews, late of Wootton House Gardens, Bedford. Death occurred following an operation in West Bromwich Hospital.

ANSWERS TO CORRESPONDENTS.

Address: *Correspondent, Reading.* If you will send your name and address to the Secretary of the National Chrysanthemum Society, a copy of the schedule will be sent you.

Acetylene Gas Residue: *F. C.* The residue from the acetylene gas plant is practically pure lime, and after it has been weathered for a week or two it may be used in the garden where lime is required.

Carnation Sport: *N. O.* The flower is of good form and has an excellent calyx, consequently it is very promising. We advise you to grow a small stock of it and exhibit the variety next year at the exhibition of the National Carnation and Picotee Society. So far as we are aware there is no recognised sport from the variety you named.

Grubs for Identification: *D. G. L.* It was impossible for the grubs to be identified as they arrived in a very bad condition. If you care to send further specimens place them with a leaf or two in a small box.

Names of Plants: *F. F.* We do not undertake the naming of florists' flowers: send to a nurseryman who specialises in Dahlias. *B. J. F.* 1, double form of Helianthus multiflorus; 2, Helenium autumnale rubrum; 3, H. pumilum; 4, Veronica amethystina; 5, Lythrum Salicaria; 6. Lysimachia vulgaris. *E. T. S.* 1, Spiraea (send when in flower); 2 Sedum Sieboldii; 3, Cotoneaster Simonsii; 4, Berberis Thunbergii; 5, Berberis vulgaris; 6, Stachys lanata; 7, Phalaris arundinacea; 8, Spiraea Anthony Waterer; 9, Carex pendula; 10, Anaphalis margaritacea; 11, Pinus sylvestris var. globosa; 12, Pinus leucodermis. *R. G.* 1, Sedum rupestre; 2, Cassinia fulvida; 3, Sedum hispanicum; 4, Helichrysum rosmarinifolium; 5, Olearia Gunnii; 6, Saponaria officinalis flore-pleno; 7, Senecio laxifolius; 8, Helichrysum bellidioides; 9, Muehlenbeckia axillaris; 10, Veronica propinqua. *M. K.* 1, Lycopus europaeus; 2, Aster salicifolius (an alien); 3 and 4, Pimpinella Saxifraga. *S. P. S.* 1, Spartium junceum; 2, Escallonia rubra; 3, Hyssopus officinalis; 4, Hypericum patulum; 5, Ruta graveolens; 6, Veronica Andersoni variety; 7, Lycium species (cannot name without flowers); 8, Myrtus communis var. tarentina.

Communications Received.—S. L. and C.—G. E. M. —A. H. G.—C. S.—S. F. A. W.—W. F. R.—W. G.—G. M. G.—Scotie—A. B. H.

THE

Gardeners' Chronicle

No. 1969—*SATURDAY, SEPT.* 20, 1924.

CONTENTS.

Alpine Garden—
  Campanula Profusion 193
  Saxifraga Huetiana 193
Alps, a novice in the... 198
Apple Orchards in Devon 202
Books, notices of—
  The Roses of Britain 200
Bulb Garden—
  Snowdrops, deep planting of ... 197
Dahlia, history of the 191
Ellis, Mr. T. E. ... 192
Education and Research, new grant for agricultural 192
Flowers, some good autumn... 195
Fruit crops, remarks on the condition of the 200
Fruit garden—
  Pears, two excellent 201
  Plum, Washington 201
"Gardeners' Chronicle" seventy-five years ago 193
Imperial Botanical Conference 200
Palms of the Riviera 197
Potato Sharpe's Express, cropping capacity of 202
Rhododendrons ... 199
Rose Garden—
  Hybrid Musk Roses 198
Societies—
  Antwerp International Exhibition 205
  Bermondsey Municipal Flower Show 204
  National Dahlia ... 202
  National Rose ... 203
Trees and Shrubs—
  Lonicera syringantha 197
Vegetable Garden—
  Leeks 201
Week's Work, the ... 194
Welsh Garden, notes from a 196
Wisley, notes from ... 197

ILLUSTRATIONS.

Dahlia Mrs. Skevington 201
Ellis, Mr. T. E. portrait of 192
Helenium Mrs. Bradshaw 195
Hibiscus Waimeae 193
Rose Moonlight in Kew Gardens, a bed of 199

Supplementary Plate.
Hybrid Musk Rose Penelope.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich 54·9.

Actual Temperature:—

Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 17, 10 a.m: Bar. 30·: temp. 62°. Weather, Dull.

London Parks and Open Spaces.

Londoners who are proud of their parks and who admire the varied beauty which they present will be grateful to the London County Council for publishing an account* of the parks and open spaces which are under their charge. For the modest sum of one shilling those who provide for the maintenance of the parks may learn of the extent of land devoted to their recreation, the cost of upkeep and the staffs engaged in ministering to their pleasure. Incidentally they may learn what the writer of the Foreword thinks of their civic knowledge. But Londoners are bland and long suffering and will bear the mild chiding of the clerk to the Council with the same equanimity with which they enjoy the work which he or his colleagues are doing in making beautiful the parks under their care. The clerk might, however, have done a yet more notable public service had he given information of the manner in which London parks and open spaces compare in extent with those of other great cities. For even now few are alive to the supreme importance of parks and open spaces to the health and well being of the community; and there is yet lee-way to be made up. For the Council only came into existence after the opportunity of providing an ample sufficiency of parks and open spaces in London, had in large measure, passed. Their administration deserves grateful recognition on the part of every inhabitant of the "mighty wen"; but, nevertheless, those who appreciate the great value of sunlight to the health of large communities will note the fact that whereas the administrative county of London spreads over an area of one hundred and seventeen square miles, the parks and open spaces under the control of that body amount to but little more than eight square miles. Expressed in acres, the park land of London looks more imposing—amounting as it does to upwards of 5,200; but the fact remains that this figure represents a comparatively small percentage of the total area. It must not be forgotten, however, that there are numerous other areas controlled by authorities other than the County Council, which if outlying parks and spaces are included—Bushey Park, 994 acres; Hampton Court, 820 acres; Kew Gardens, 299 acres and Richmond Park, 2,358 acres—as well as the more strictly London spaces, Hyde Park, 364 acres, Green Park and St. James' Park, each of fifty-three acres, Kensington Gardens, 274½ acres, Regent's Park and Primrose Hill, 472 acres and others—bring the acreage of the non-council parks and spaces up to rather more than 6,500—a little over ten square miles. There is indeed reason for satisfaction in the fact that the total open spaces in and near by London amount to some twelve thousand acres; but when again the total is represented in a percentage the discovery that all the parks and spaces of London, including those in districts surrounding the administrative county, do not amount to much more than two per cent. of the total area of the county. These figures indeed evoke mixed feelings of gratitude and desire for further space, though how that desire is to be fulfilled must prove a puzzle. Yet despite its difficulty of attainment the assertion of the need for more may not be without use if it convinces authority that London is still far from over-parked and that no effort should be spared to secure any parcel of ground for use permanently as a sun-trap and a breathing space. It is known beyond doubt that certain of the most grievous maladies which befall urban dwellers are provoked by lack of sunshine and that, of them, some may be abolished or at least greatly reduced by the simple process of letting in the light. There are of course other ways of effecting this, but in view of the toll which deficiency diseases take of the dwellers in cities no means of yet further insuring public health should be left unused. As to the 117 parks, gardens, churchyards, and open spaces now controlled by the Parks and Open Spaces Committee of the London County Council, few can be aware of their varied beauty and interest. They include the collection of tropical Palms at Avery Hill, the sub-tropical garden in Battersea Park, the picturesque woodlands of Bostall Heath, the old garden of Brockwell Park—which was the prototype of several similar old-world gardens which have been laid out by the Committee in other parks—Chelsea Embankment Gardens, which are apt to be less gay than perhaps they might be; many commons wisely left in large part as commons but susceptible here and there of planting with more common plants and more Gorse, and particularly the double-flowered Daisy, sent to bring tears of joy to the eyes of some future Londoners; the American garden of Azaleas and Rhododendrons and the rockeries of Dulwich Park, and so on. No one who turns these interesting pages can fail to realise that the Council has taken large and long views of its duties; that they give large scope to the abilities of their garden staffs, and that of it they make full use.

A New American Rose.—A new Rose, provisionally named Perfection, has been accepted for registration by the American Rose Society. It belongs to the Hybrid Tea class and is a sport from the well-known variety Columbia, which it closely resembles in colour. It also possesses a similar habit to its parent, and the number of petals average between fifty and fifty-six. Perfection is similar to Maryland, but is different in size and more double.

The Necessity for Lime or Chalk in Hertfordshire.—The agricultural committee of the Hertfordshire County Council has recently issued a bulletin entitled *The Necessity for Lime or Chalk in Hertfordshire.* The number of cases of shortage of chalk on arable land encountered in the county during the past eighteen months is sufficient justification for the issue of a special pamphlet dealing with this subject. The reasons why land requires lime or chalk are briefly set forth and the method of detecting any deficiency is outlined together with advice on the quantities to use, the time of application and the cost. The bulletin has been prepared by Mr. H. W. Gardner, B.A.

Brentford's New Park.—The old county town of Middlesex is waking up to the need for open spaces. Not long since, its District Council purchased the little estate of Carville Hall, but the new Great West Road has divided this into two parts, while a further portion will be taken by the Southern railway for new sidings for the market close to Kew Bridge. In due course, with new land purchased with the money received as compensation, this park will provide an open space for the inhabitants of a thickly populated area. On the western side of the town the Boston Park Estate and house have been acquired quite recently and were opened to the public by Lady Cooper—a Brentford-born lady and formerly Lady Mayoress of London—on Thursday, September 11. This park, to be known as Boston Manor Park, is thirty-six acres in extent, finely wooded, and contains an ornamental lake as well as wide spaces for playing fields. It contains a particularly fine specimen of the Cedar of Lebanon. Boston Park has a long history; it was crown property on two occasions, and has belonged to an Earl of Leicester as well as to Sir T. Gresham, of Royal Exchange fame. In more recent times the estate has been owned by the Clitherow family, from whom it was purchased by the Brentford Council. The total cost of securing the park, including certain compensation for disturbance, will be about £25,000. It is doubtful whether any open space in the south-western part of Greater London can compare with Boston Manor Park for beauty.

History of the Dahlia.—Mr. C. Harman Payne draws our attention to an error in the date of the introduction of the Dahlia into Europe in our leading article on "The Dahlia" on page 175. He writes as follows:—A rectification in your leader on page 175 is necessary, where the writer erroneously says "Mr. Krelage accepts the date of 1798 assigned by Mr. C. Harman Payne as that of the introduction of the Dahlia into Europe." What Mr. Krelage really does is to accept my date of 1798 as that of the introduction of the flower into

---

* *London Parks and Open Spaces.* Hodder and Stoughton, Ltd., London. 1s. net.

England. It had previously been introduced into Europe *via* Spain at least nine years earlier. It is curious that for more than a hundred years every English Dahlia historian stated that the Dahlia was introduced into England in 1789, an obvious impossibility, when we were told that it was due to the agency of the Marchioness of Bute during the time her husband was British Ambassador at the Court of Madrid. There was no such title as Marquis of Bute at that time, the title not having been created till 1796, and that gentleman was not our Ambassador at Madrid in 1789. These facts caused me to embark upon an investigation of the matter, which has proved beyond all question that the flower was sent from Madrid to Kew in 1798. How this is clearly proved is ascertainable by reference to my article in the *Royal Horticultural Society's Journal*, Vol. XLII., Pts. 2 and 3, p. 305, entitled "The Dahlia; its reputed introduction in 1789."

Wigan Parks.—Mr. John Richardson has been appointed superintendent of the parks at Wigan in succession to Mr. F. Baker, whose appointment as superintendent of the parks at Portsmouth we recently announced. Mr. Richardson joined the Parks Department at Swansea, after leaving Kew, about fifteen years ago, and for the past five years has been assistant superintendent of the Swansea Parks under Mr. D. Bliss. Mr. Richardson obtained the appointment at Wigan out of one hundred and sixty-seven applicants.

Pyruses and Autumn-flowering Shrubs at Kew.—The many species and varieties of Pyruses at Kew are now at the height of their autumnal beauty and never before do we remember the trees being so heavily ladened with fruits. The specimens of P. Aria majestica near the Temperate House are indeed magnificent, being clothed with large scarlet fruits which make a striking contrast to the large, deep green leaves. P. decurrens, a pinnate-leaved hybrid, is also of great beauty, while P. prunifolia, P. sikkimensis, P. rotundifolia and P. pinnatifida fastigiata are all producing enormous crops of fruits. There is also a beautiful specimen of P. Vilmorini, the long, feathery, pinnate leaves now assuming a bronze-red tone, while the fruits are of a distinctive shade of coral-red. It is a native of Western China and the specimen was presented to Kew in 1905 by Mr. M. L. de Vilmorin. Of flowering trees and shrubs Clerodendron Fargesii is a mass of flowers to be followed later by the peacock-blue fruits held in a cup formed by the persistent reddish calyx, while Rhododendron flavidum is giving, evidently out of season, a few of its pale yellow flowers. Abelia grandiflora is also a very attractive autumnal-flowering shrub, and the prostrate species A. longituba has even larger flowers, their white throats being marked with yellow blotches. One of the finest of autumn ornamental trees is Nyssa sylvatica, valuable for the bright effect produced by its brilliant red foliage.

Cider and Cider Fruit Competitions.—In connection with the fourth Imperial Fruit Show, which will be held at Bingley Hall, Birmingham, from October 24 to November 1, separate classes will be devoted for exhibits of sweet and dry cider of any age, and also three classes for cider fruit. This is the first occasion on which competitions for cider have been provided in these shows, and doubtless their inclusion will prove particularly attractive to west country fruit-growers, both on account of the proximity of the show to some of the important West-Midland centres of commercial fruit culture, and of its recognition in local interests. Entries close on September 27, and entry forms may be obtained from Mr. J. F. Tamblyn, Secretary of the Imperial Fruit Show Committee, 18, Bedford Square, London, W.C. 1; or the Secretary, National Fruit and Cider Institute, Long Ashton, Bristol. The judges will be Professor B. T. P. Barker, Messrs. E. G. F. Walker and J. H. Wootton.

Mr. T. E. Ellis.—Formerly in charge of the parks and gardens at Grantham, Mr. T. E. Ellis has now been appointed head gardener to the Buxton Corporation, where he will have ample opportunities of displaying his skill and taste. Mr. Ellis has a wide experience. He began his gardening career at The Denbies, Surrey, and passed thence to Sir T. D. Llewelyn's gardens at Penllergaer, Swansea, where he became familiar with trees, shrubs, alpines, and herbaceous plants. He returned to Surrey from Wales and was for two years journeyman at the famous Ranelagh Club, Barnes. His next appointment was that of pleasure-ground foreman at Leighton Hall, Welshpool; a similar appointment at Belmont Hall, Northwich, was followed by a period as foreman on garden contract work with Messrs. Lane and Son, Berkhamstead. Then came the war and for three-and-a-half years Mr. Ellis served in France. In May, 1919, he was appointed to the charge of the public parks and gardens of Grantham where he did excellent work, especially in the laying out of Wyndham Park. He took up his duties at Buxton in July last.

MR. T. E. ELLIS.

New Grant for Agricultural Education and Research.—The Government has decided to provide a further sum of £500,000 for agricultural education and research in addition to the funds already available for that general object, amounting to £1,000,000, under the Corn Production Acts (Repeal) Act, 1921, and about £400,000 per annum from other Government funds. It has been arranged that this new money will be paid over to the Development Fund by the Treasury as required, and that it may be looked upon as provided for use during the next five years. The Ministry of Agriculture and Fisheries is framing proposals for the following schemes to be assisted from this new money:—(a) Foot and Mouth Disease Research—work already in progress; (b) Economic Research—scheme for testing new systems of farm management and for strengthening the staff of the Institute of Agricultural Economics at Oxford; (c) Marketing Investigations—work of Marketing Commissioner and six Marketing Officers already appointed; (d) Veterinary Education and Research; (e) Agricultural Advisory Scheme—to complete the existing advisory scheme by the appointment of additional scientific officers, and for a scheme to provide milk analysts at each of the agricultural colleges; (f) Soil Surveys—to provide for the extension of soil surveys which have hitherto been started only in certain particular areas; (g) Additional Research Grants—to meet the cost of further developments at existing Research Institutes (increases of staff, &c.) beyond those hitherto contemplated; (h) Vegetable Testing; (i) National Institute of Agricultural Botany—to develop further the Institute's operations, particularly in regard to variety trials of field crops. The Ministry of Agriculture has, with the concurrence of the Development Commissioners and the Treasury, made certain awards of grants in aid of research into specific agricultural problems during the academic year 1924-25. These grants are known as Special Grants and amount in all to £3,047. They stand apart from the much larger grants which are made to the various research institutions in the country for the support of the general scheme of agricultural research. Of the total, £250 is granted to the University College of Wales for research into the nutritive value of Grasses; £165 to the Bangor University College for research into dry rot of Swedes; and £190 to the same institution for research into the subject of intestinal parasites of sheep. The Imperial College of Science, London, is granted £160 for research into mosaic disease of Hops, whilst the Leeds University is granted £200 for a research into the colouring of Wensleydale sheep, and £220 for research into internal rust spot disease of Potatos. £250 is granted also to the Midland Agricultural Dairy College for certain investigations in regard to the composition of milk; £250 to the East Malling Research Station in respect of research into Raspberry diseases; and £265 to the School of Agriculture, Cambridge, for research into soil moisture and air-earth currents; £250 will also be awarded to an institute, which has not yet been decided upon, for research into the eel-worm parasite of Potatos. These are the principal awards. A full list of them will be printed in the *Journal* of the Ministry.

A New Agricultural Exploration of North-Eastern China.—The United States Department of Agriculture has for a number of years been exploring the agricultural resources of China, and recently a new agricultural exploring expedition, headed by Mr. P. H. Dorset, left San Francisco. The work of the expedition, which will confine its activities to the north-eastern part of China, in particular the provinces of Chihli, Shansi and Manchuria, is designed to benefit principally the northern portions of the United States, and especially the Great Plains region. Forage crops and Cereals of value are likely to be found in Manchuria and the Soya Bean, which has in recent years become an important crop in the United States, will be studied carefully, with a view to securing new varieties of promise. Special attention will also be given to the study and collection of highly developed fruit and Nut crops, such as bush Cherries, Persimons, Pears, Peaches, Plums and Chestnuts. The co-operation of the agricultural experts of Nanking University and other institutions in China will be secured to the fullest extent possible, and it is expected that American missionaries will assist in making the expedition a success.

British Mycological Society.—The twenty-eighth autumn fungus foray will be held at Bettwys-y-Coed, North Wales, from Monday, the 22nd, to Saturday, September 27th. The headquarters of the meeting will be at the Royal Oak Hotel. The annual meeting of the society will be held on the 23rd inst. and during the week arrangements have been made to visit the woods in the neighbourhood. Mr. J. Ramsbottom, M.A., F.L.S., will deliver his presidential address on "The Taxonomy of Fungi" and other papers which will be read include "An Aldehyde Reaction in the Tissues of Fungi," by Dr. H. Wager, F.R.S., F.L.S., and "A New Species of Urophlyctis producing galls on Lotus corniculatus," by Mr. A. W. Bartlett, M.A.

Descriptive Labels in Public Parks.—Mr. Alfred B. Melles, of Katotjesstraat, Ypres, Belgium, writes:—"In your issue for September 6, appears a very interesting reference to the descriptive charts bearing a short outline of the history of the Dahlia which are exhibited near the Dahlia borders in Hyde Park and St. James' Park. The Superintendent of the Royal Parks is to be congratulated on this pleasing development, and the interest shown therein by the public is what might be expected. A careful system of labelling plants, trees, and shrubs in our Public Parks, together with such descriptive remarks suitably displayed, must add to the delight of visitors and be of real educational value. Tact and a sense of neatness must accompany the use of such labels or charts. Correct and legible labelling of trees and shrubs would appear to be the most necessary since they are of more permanent interest. It is particularly desirable that the less common trees in our parks and open spaces should be accurately and legibly labelled, more especially for the benefit of students. There are many rare or exceptional trees in various parks throughout the country, some of them older or finer specimens than exist in our National Botanic Gardens, but how few, even of the exceptional specimens, are labelled? It is probably true that a far greater proportion of trees in private gardens are clearly labelled than in Public Parks, but it would be interesting to have a list of parks where trees are correctly labelled. In many cases the assistance of recognised authorities on trees would be necessary before accurate labels could be prepared, but such assistance would be gladly given I feel sure."

Appointments for the Ensuing Week.—Monday, September 22: National Chrysanthemum Society's Floral Committee meeting at Holland Park Hall. Tuesday, September 23: Royal Horticultural Society's show at Holland Park Hall (3 days); Newcastle and District Horticultural Society's lecture. Thursday, September 25: Royal Botanic Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Experiments in Potato Planting.*—Regents, weighing on an average four ounces each, were cut into sets of single eyes of the average weight of a quarter ounce each; they were planted in February on unmanured land, and in alternate rows with small, whole Regents of the same average weight. The former produced a crop of twenty-one bushels to the chain, and the latter seventeen. The difference was partly to be ascribed to some of the whole sets not growing The tubers of the cut sets did not excel the others in size as much as I had expected. The conclusions I have drawn from various other experiments on sets of single eyes of about half ounce each are, that early kinds, and all sorts, late planted especially, on poor ground, require the largest sets; whilst late kinds, early planted, and on rich land, prosper with smaller sets. Regents and Forty-folds were thus planted on the same plot of ground in February. The produce of the former is excellent, the tubers being often of nearly a pound in weight; but the crop of Forty-folds is very poor. Small sets of Early Frame produced a good return in the garden, but the crop in the field was miserable. I also cut Walnut-leaf Kidney in crown and bottom sets. The former were planted in the field with excess of manure, came up and ripened early, and are not affected with the rot. The bottom ends were planted at the same time, close by, in unmanured ground, came up late, and many are rotten. As to the rot, it prevails in highly-manured ground and heavy soils, even if thoroughly drained. The late planted also are much diseased, but the early planted, on poor dry soils, with manure in moderation, have almost always succeeded. These crops are generally good and sound. *Sigma., Gard. Chron., September 22, 1849.*

ALPINE GARDEN.

CAMPANULA PROFUSION.

A capital clump of the pretty Campanula Profusion in its best form was in full bloom recently in the rock garden of the Royal Botanic Gardens, Edinburgh. It was the blue and not the mauve-grey form, the latter being the less desirable one. This hybrid was raised by the late Mr. E. H. Jenkins, and it greatly resembles C. haylodgensis, which was raised many years ago by the late Mr. Anderson-Henry, at Hay Lodge, Edinburgh. C. haylodgensis has also light blue flowers, and both it and C. Profusion possess the yellowish foliage which appears to characterise a few of the hybrid Bellflowers. Whence this character has been derived it is difficult to understand, as, so far as is known, neither possible parent possesses this yellow leafage. It is very marked, and adds to the distinctness of the plants. The seed parent of C. Profusion was C. pyramidalis, and its other parent has been thought to be either C. carpatica or C. isophylla. It appears almost incredible that C. Profusion should be the offspring of the tall, spire-like C. pyramidalis, but the evidence on the point looks conclusive, resting as it does upon the statements of Mr. Jenkins himself—one of the most careful of men.

C. Profusion grows only a very few inches high, is of rather trailing growth and has large, wide-mouthed flowers of a delightful shade of blue. It is easy to grow in loam, leaf-mould and a little sand, and is all the better in a little shade.

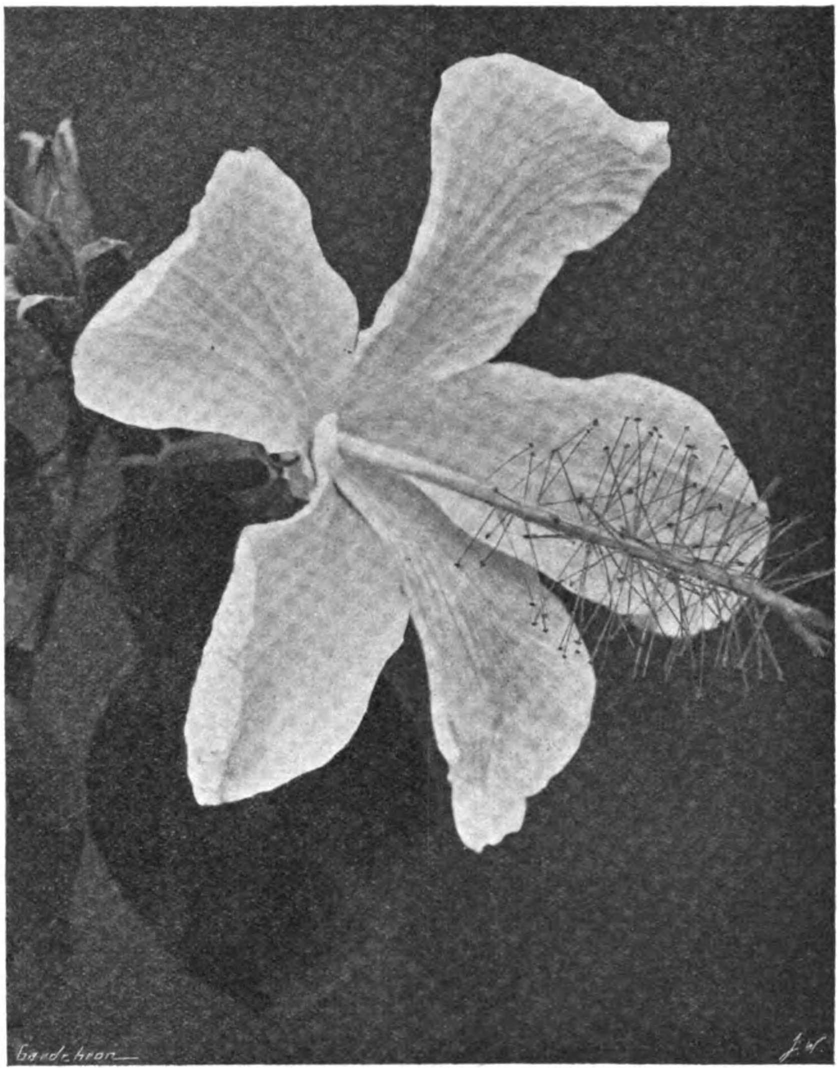


FIG. 71.—HIBISCUS WAIMEAE.
R.H.S. Award of Merit, September 9, 1924 (see p. 189).

SAXIFRAGA HUETIANA.

I was interested in the note by *F.* on this little plant in *The Gardeners' Chronicle* of August 2nd. It is a Saxifrage seldom alluded to, yet one which is of great value for rock gardens and semi-wild places. I find that it always does best in shaded or semi-shaded places, where it looks brighter and happier than in sun, and where, also, it appears to sow itself more freely than in a sunny spot. It looks bright and cheerful on the north side of the rock garden, and the long time during which it remains in bloom renders it of great value Your correspondent has not referred to its property of free self-sowing.

I have had a succession of plants for many years which were the progeny of a small clump of S. Huetiana given me by a friend, and every year the succession has been maintained. The best plants are those which are left to flower where they spring, but a little thinning out is desirable where the seedlings come too thickly.

The first flowers are almost sessile, but the stems gradually lengthen and flowers are produced from these for many months. In gardens it looks as if the names of S. Huetiana and S. Cymbalaria are practically interchangeable, and the difference between the two plants is so small as to be practically negligible. *S. Arnott.*

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Masdevallia.—The months of February or September are usually chosen for re-potting or top-dressing these plants. The present time is preferable. If a representative collection of Masdevallias is grown there are usually some plants in bloom at all seasons. The strong-growing section, which is characterised by flowers of brilliant colour, includes such as M. Veitchiana, M. Harryana, M. amabilis and M. ignea. These may be re-potted or re-surfaced as may be found necessary. The plants are now developing new leaves, and young roots will soon be produced; the latter will grow quickly into the new compost and establish themselves firmly before the winter arrives. Healthy specimens with sufficient rooting space for another season will not need re-potting; this will be an advantage if free-flowering plants are required, as they seldom flower well the first season after re-potting. When the soil has become sour it may be picked out carefully from between the roots, down to the drainage, and new compost worked in to replace the old. Large plants which have lost a number of their leaves and have become bare at the centre should be divided and, after cutting away any dead portions, either be potted up singly in small pots or made up again into specimens. These stronger growing kinds require plenty of rooting space, and are best grown in pots or rather deep pans. The dwarf kinds succeed in comparatively small pots or shallow pans, and should be suspended from the roof rafters, or elevated well up to the light on a separate stage, as they do not flower well if grown far from the light. Masdevallias succeed if placed in the warmest and shadiest part of the cool house. The winter-flowering M. tovarensis should not be disturbed at the roots at this period, and the same remarks apply to the M. Chimæra group.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

The Rock Garden.—Frequent showers during the past few weeks have caused the stronger growing subjects to make vigorous growth, and timely steps should be taken to prevent them from smothering their less vigorous neighbours. Weeds are also unusually troublesome and the removal of them entails considerable labour, but every effort should be made to prevent them seeding. Where extensions or overhauling of existing rock gardens are contemplated now is a good time to proceed with the work. Whatever kind of arrangement is decided on, it is essential that the stone should be firmly embedded, and not merely laid on the soil, and that the final arrangement should leave ample space for planting so that the roots of the plants may ramify amongst the stones.

The Rose Garden.—Although many modern Roses do not compare favourably in form and fragrance with some older varieties, their superiority in autumn flowering qualities is beyond question and they compel admiration by the fact that they are almost as gay in late summer and autumn as in early summer. The advantage of cutting back the growths after the first flowering in July is now apparent, for this summer pruning has favoured the development of vigorous shoots which are bearing flowers as beautiful as those of July. While some of the Hybrid Perpetuals flower freely in autumn, such as Frau Karl Druschki, Louis van Houtte, Fisher Holmes, Hugh Dickson, Captain Hayward, etc., as a class they cannot be compared with the Teas and Hybrid Teas for profusion of flowers in the late summer and autumn months. Note should be taken of varieties which have suffered from mildew, with a view to eradicating the disease. Where this is prevalent the plants should be sprayed with an approved fungicide now, and during the winter all loose soil on the surface should be removed and fresh material added. Hybrid Perpetuals frequently produce long, flowerless growths in autumn and if these are not wanted for pegging down, it is wise to shorten them somewhat, as not only does this help to strengthen the lower buds, but it saves a good deal of trouble which may be caused through the excessive swaying of the growths during high winds.

Phlox.—Although the propagation of herbaceous Phloxes may be effected in several ways, there is no better method than by means of cuttings for the maintenance of collections in private gardens. During the next few weeks suitable shoots may generally be found at the base of flowering growths; these may be inserted in boxes of sandy soil and stood in a cold frame, where they will quickly form roots and make good specimens for planting out in the spring.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Chrysanthemums.—In low and cold districts it is well to house the plants early and especially does this advice apply to those grown for the production of large blooms and for exhibition, whereas in situations of a low altitude the plants take a longer time to develop their flowers than do those grown on high ground. In the Northern Midlands growers have to be very much on the alert for early frosts after the first week in September and, indeed, I have known disastrous visitations before that date. Experience has proved to the writer the wisdom of housing the bulk of the plants in that district by September 20th, although in the south and south-west districts some ten days later might be early enough. At the first housing all the early and most of the mid-season varieties will claim attention, but in view of the long period during which the Chrysanthemum is expected to provide flowers, the later varieties should be left out as long as it will be safe to leave them unhoused, so long as provision is made for protection against sudden frosts. A little extra trouble on the part of the person in charge will ensure the safety of these late plants outside for some few weeks longer. The plants should be rearranged in the rows, starting with the tallest at one end and sloping down to the other; if the supporting sticks are left about one foot above the tops of the plants they will provide support for strips of light tiffany which should be stretched over the plants every night on which there is the slightest indication of frost, until the plants are finally housed.

Mildew.—Mildew is apt to attack Chrysanthemums at this season. The best remedy I know is to take one pound of quick-lime and one pound of flowers-of-sulphur, add to this five pints of water and boil in an old saucepan, keeping the mixture stirred until it comes to the boiling point. Boil for ten minutes and then allow the mixture to settle. When quite cool pour off the clear liquid, bottle it and keep it corked when not in use. Mix one part of this liquid to one hundred parts of soft or rain water and syringe every part of the affected plants, laying them on their sides to do so. If this is done thoroughly, prior to housing, mildew will rarely cause further serious trouble, provided that careful attention is paid to watering and airing. After housing the plants it is well not to give them liquid or other stimulants for a few days; full ventilation should be afforded night and day for a time and should the weather prove hot and dry in the day time, a slight overhead syringing in the late afternoon for the first few days will be beneficial.

HARDY FRUIT GARDEN.

By R. W. THATCHER, Gardener to MARK FIRTH, Esq., Carlton Park, Market Harborough, Leicestershire.

Peaches and Nectarines.—As soon as the fruits are gathered from these trees, it is a good plan to untie the growths that were laid in during the summer and remove the old fruiting wood, thus allowing sun and air to thoroughly ripen the growths which will carry next year's crop. Trees that have cropped well will be greatly benefited by a good watering at the roots with some soluble artificial manure, or a liberal application of diluted farmyard-manure. During a wet summer, such as we have experienced this season, wall trees are apt to be overlooked in the matter of moisture. Whatever the rainfall in the open garden, the borders on south or west walls will rarely have too much water. As regards pruning, the same remarks apply to Morello Cherries; it is better to thin out the old wood now than leave it until the New Year, when the weather is usually anything but pleasant.

The Fruit Room.—If not already done the fruit room should be cleared out and made ready for the storage of Apples and other fruits. The walls should be lime-washed and the shelves scrubbed down with hot water and soft soap; the doors and ventilators should also be thrown open to allow the interior to dry thoroughly. The best floor for fruit rooms is the natural earth, but those with brick or stone slab floors should be well washed out and dried. Cleanliness is one of the first essentials in storing fruits, and Apples are best placed carefully on the shelves without anything placed on them, so as to allow the air to circulate around the fruits. On no account use hay to lay them on or it will taint the Apples. Clean Wheat-straw may be used for the softer, early Apples, if thought necessary.

FRUITS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Winter Cucumbers.—Young plants raised from seed, sown as advised in a previous calendar, should have made stout, healthy, young specimens ready for planting out in their fruiting quarters; but before planting, the house in which they are to be grown should be thoroughly cleansed by washing all woodwork and glass with a strong solution of soft soap, and the wall limewashed with newly slacked lime. The compost in which they are to be planted should be made a little more porous than that recommended for skmmer cultivation and it should be free from animal manure. The plants should, as the pits are cleansed, be set out on small hillocks of soil, and when the young roots appear on the surface add light top dressings at short intervals and so encourage sturdy growth. To be successful with winter Cucumbers it is desirable to have a steady bottom heat, either produced by fermenting material or obtained from the hot water pipes. Plant at a distance of three to four feet apart, as this will allow the laterals to extend a little more than is advised for summer fruiting. Admit air, if only for a short space of time, whenever the outside conditions will allow, but close the house early and make as much use of sun heat as possible to maintain the requisite temperature.

Ripe Grapes.—Examine the bunches of ripe Grapes frequently for the removal of berries that show the least sign of decay, for if this is neglected for any length of time the bunch may soon become disfigured and spoilt. Where a goodly number of the bunches have been cleared from the vines and only a few remain, they may be cut and stored in bottles in the Grape room. Any dark room available will suffice, provided sufficient warmth can be obtained to dispel the damp. The bunches should be cut with a good length of wood attached and the ends placed in bottles containing soft rain water and broken charcoal. When all the bunches are cleared examine the vine borders, and, if necessary, give the soil a thorough watering; if the crop has been a heavy one, diluted liquid manure should prove very beneficial to the vines in helping them to plump up the buds which are to produce Grapes next year.

Winter Tomatos.—Tomato plants which have been treated as advised for fruiting during the winter months by growing them outside, should be placed in their winter quarters after the house has been thoroughly cleansed. For the present, admit plenty of fresh air by opening the top ventilators.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney
The Moat, Berkswell, Warwickshire.

Lamb's Lettuce or Corn Salad.—As this makes a useful additional autumn and winter salading the seeds should be sown now in drills. It is a very hardy crop as a rule and will generally continue to throw up a good crop of leaves throughout the winter months; it may also be sown broadcast on a spare piece of ground.

Cardoons.—As the plants become fit for blanching it will be necessary to remove some of the bottom leaves, but see that the roots have sufficient moisture before placing more earth up to the plants. Draw the remaining leaves closely together and secure them with Raffia; some growers use paper bands and others use bands made with Hay, but I think soil placed firmly around the plants is best of all. Sprinkle plenty of soot or quick-lime all over the surface of the ground before earthing-up to ward off slugs.

Autumn-Sown Onions.—These have germinated freely, consequently the hoe should be used between the lines to check weeds. Remove all weeds from among the seedlings and later apply a mulching of fine litter which will afford some protection through the winter.

Autumn-Sown Cabbage.—The planting of this crop should be proceeded with as the plants become large enough to handle; where it was possible to prick out seedlings a few inches apart some time ago good plants are now available. Ground where Peas or Onions have been grown will suit this crop. Allow eighteen inches between the lines and twelve inches to sixteen inches between the plants, but the distance depends on the variety as some are more robust than others.

Root Crops.—As the crops come to maturity the roots should be lifted with care, cleaned and stored in ashes or sand. Allow sufficient covering to exclude frost—old Bracken is very useful for this purpose.

General Work.—Make further sowings of Prickly Spinach as ground becomes vacant; examine the rows of late Peas and if mildew has made its appearance dust the rows with sulphur to check the fungus. See that late crops of roots are sufficiently thinned in good time. Watch the supply of Lettuce seedlings and, if necessary, sow more seeds thinly on a warm border. The use of the Dutch hoe has been retarded lately owing to wet weather, but every favourable opportunity should now be taken to have the ground hoed and cleaned.

SOME GOOD AUTUMN FLOWERS.

One often hears regret expressed that autumn flowering shrubs are comparatively scarce. It would be better, some people think, if the lavish rush of blossom in late spring and early summer were distributed over a longer period.

It may be of some slight service, therefore, to name a few of the less commonly grown species that are at their best in late summer and early autumn, leaving out of account for my present purpose such well-known shrubs as Eucryphia, Buddleia, etc.

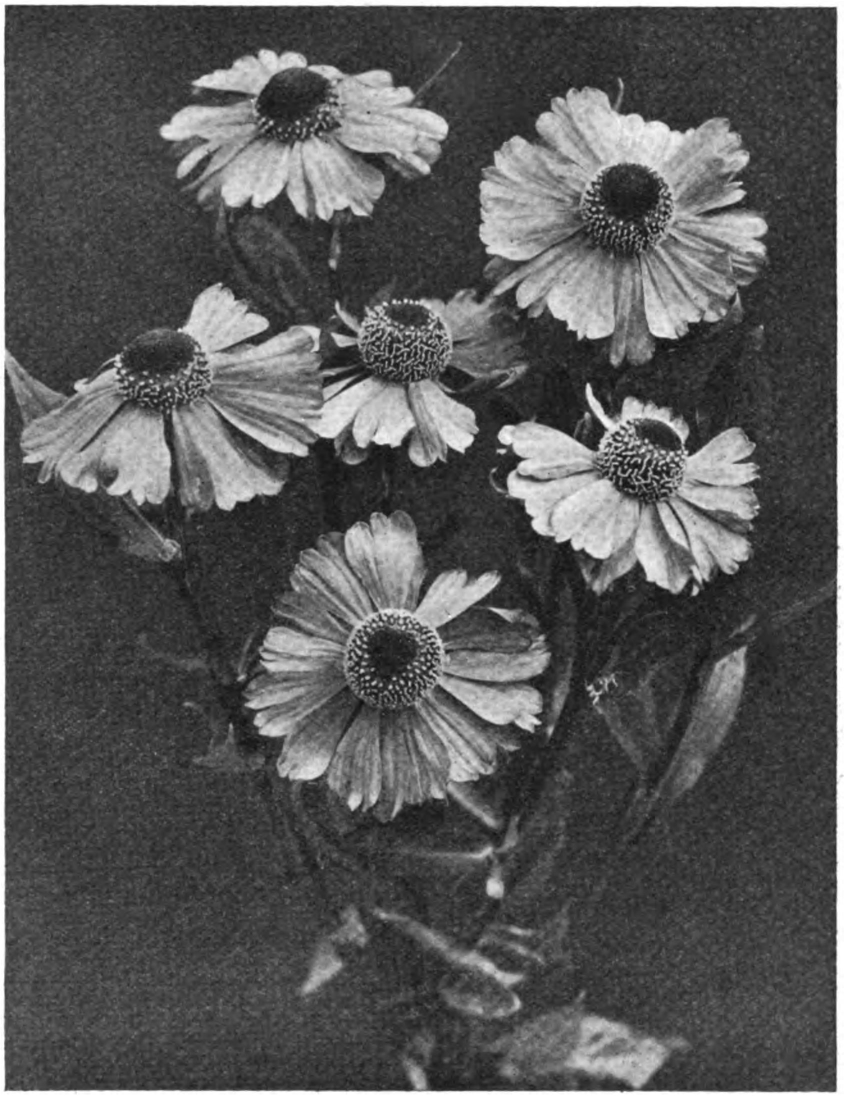


FIG. 72.—HELENIUM MRS. BRADSHAW.

R.H.S. Award of Merit, September 9, 1924 (see p. 189).

Most species of Cistus have withdrawn their display before the end of summer, but C. Loretii, formerly known as C. lusitanicus, continues to produce its lovely white flowers with a crimson blotch at the base of each petal, far into autumn. It is reputed to be a natural hybrid between C. ladaniferus and monspeliense, and differs from other Rock-Roses, not only in continuing to flower long after all the rest have gone to seed, but carries its blossoms till night. Those who know southern Spain in May will remember how gorgeous is the display of C. ladaniferus and other species over miles of dry hillside in the forepart of each day, and how the blossom is all shed by 4 p.m., the fallen petals of the white-flowering species turning to sulphur-yellow and forming a brilliant carpet under the bushes.

Ligustrum sinense, which Mr. Bean rightly pronounces to be "the best and most ornamental of deciduous Privets," makes a most attractive show in August, growing to fifteen or twenty feet high and furnishing every branch with sprays of snow-white bloom, each eight to ten inches long and six inches broad; the variety multiflorum is even better than the type, and may be distinguished by having chocolate anthers instead of pale yellow ones. This fine shrub proved as hardy as the common—too common—Privet.

We owe a host of good things to Mr. E. H. Wilson's energy in collecting, and among them all there is none, I think, that makes a more striking display at this season than Spiraea arborea. It is the loftiest of the genus; if given ample space in moist ground it will grow to a height of twenty or thirty feet and bear a long succession of immense, feathery panicles of white blossom. But beware of planting it among shrubs of lowlier or slower growth, for this giant Meadow-sweet is nearly as broad as it is high.

Spiraea japonica (syn. callosa) begins to flower at midsummer, but is a most desirable shrub to get established in woodland, where it will spring self-sown, for it continues to bear its flat corymbs of bright carmine flowers far into the autumn. Nurserymen are very apt to supply the dwarf varieties Bumalda and Anthony Waterer, in my opinion mere caricatures of the typical species, which grows four or five feet high. It is a merciful dispensation which rules that rabbits shall not molest any species of Spiraea.

Two species of Hydrangea come in well for late summer flowers and would be more frequently planted were they better known. One of these is H. vestita from the Himalaya, with bright green, oval leaves six and eight inches long, set on red petioles and densely clad underneath with grey down and hairs. It bears broad corymbs set with white, sterile flowers round the margin and makes a showy object in August. I do not remember whence it came hither many years ago, nor have I noticed the species in any nursery list. It soon outgrew its quarters in the flower garden, and was transferred to the wood, where it now stands twenty feet high, with a stem circumference of twenty-four inches below the low fork.

The other species is Hydrangea Thunbergii, deciduous like H. vestita, but of far lowlier stature, seldom attaining four feet high. Its corymbs consist of fertile florets in the centre, their bluish-violet colour contrasting admirably with the sterile flowers on the circumference, which are bright rose. I am puzzled to read in Mr. Bean's excellent book that the leaves of this species are dull green; that may be the normal colour in the wild plant, but in our western district they begin with a vivid grass green, changing as they mature to carmine and maroon. This pretty shrub demands full sunshine to be at its best, and is flowering very scantily this autumn in consequence of a summer wet and cold almost without precedent.

There is in full flower at Monreith just now (September 8) a pretty shrub which came here several years ago under the name of Deutzia corymbosa, but which I have since ascertained to be D. sutchuenensis, a species sent out by Messrs. Lemoine in 1897 as D. corymbiflora. It has a doubtful reputation for hardiness, having been repeatedly cut to the ground in winter at Glasnevin, where it is now successfully grown against a wall; but here it has stood uninjured for some eight or ten years in the open border, where it wreaths itself in August with a cloud of corymbose panicles of pure white, starry flowers. It seems to be distinguished from D. corymbosa by the smaller knob of yellow anthers which, in the latter species, give a yellowish tinge to the panicles, and by the minute, ruddy teeth on the leaf margins. In other respects the two species appear to be closely akin, the true D. corymbosa being preferable for all except very mild districts.

I must hold my hand now, else these notes will run to undue length; but before doing so let me mention a brace of herbs which win applause from all visitors. They belong to the far-flung genus Allium, which contains many species of no more than botanical interest; but there are two which add interest to the border in late summer and early autumn.

The first of these is Allium sphaerocephalum, an Oriental species, and an old favourite with those who have made acquaintance with it; but these seem to be few and far between, for one does not often meet with it in modern gardens. Mr. Weathers does not mention it either in his useful *Bulb Book* or in his larger *Practical Guide to Garden Plants*, and, for that matter, he makes no notice of the spring and summer flowering A. subhirsutum, so prodigal of its pretty white flowers. I chanced upon A. sphaerocephalum many years ago in a neglected corner of a spacious demesne chiefly devoted to bedding out, and begged for two or three bulbs, which have multiplied satisfactorily and delight me every recurring August with their dark reddish-purple flowers held erect on wiry, three-foot stems. Even the battering and blustering of the dismal August through which we have just passed have left them as straight as ever, with bumble bees clinging to the swinging spheres.

The other species good at this season is A. Beesianum, a recent introduction from China, I think. This carries full heads drooping on stiff, twelve inch stems, the crowded flowers being of a pleasing metallic blue—a pretty plant for the front of a border. *Herbert Maxwell, Monreith.*

NOTES FROM A WELSH GARDEN.

GROWING in a cool border, where it has been undisturbed for years, Lobelia Cavanillesii attracts a good deal of attention at this season, on account of its being uncommon and because of the brilliant scarlet and golden-yellow of its curiously formed flowers. A reputation for tenderness doubtless explains why this old species is not more often seen in gardens, but being quite herbaceous it is easily given winter covering where this is deemed necessary. We have, however, found it quite as hardy as L. cardinalis and it can be relied upon to come into flower much earlier.

Gentiana Farreri is flowering with all the vigour one could desire, in a deep, level bed, mainly composed of old black leaf-mould and loam, but several plants of this fine species which were put direct into unprepared, stiff soil near the waterside, have done just as well as those for whose comfort much labour was expended. Still, it remains to be seen how they will like winter conditions in such a medium, and it is interesting to note that some strong clumps of G. septemfida which were planted in the same unprepared ground at about the same time soon became very weak, and one or two of them promptly died. G. bavarica is also in flower, but though evidently healthy enough, it is a shy bloomer here. This species has been described as an autumn-blooming G. verna, but its blossoms are of a much deeper colour than those of the latter, their egg-shaped segments being almost black, enlivened with a lovely sheen of brilliant metallic blue. G. Pneumonanthe is flowering freely in a cool border, all of the plants (collected in Anglesey) bearing but a single flower on each stem.

The only member of its genus now in flower here is Thymus erectus, with pure white blooms, but those closely allied Labiates, the Micromerias and Satureias, are only just at their best, and very welcome they are on the dry rock-garden ledges these later days. So also is Stachys corsica, whose flat green carpet will be studded with rose-pink until the autumn is well advanced, whilst other pretty things not to be too lightly passed over at this season are the Origanums—O. Dictamnus, O. pulchrum and others. Felicia abyssinica is still bearing above its tufts of finely-cut leafage, daintily fringed flowers of a cool lilac. In the very dry, stony soil which the above enjoys, Achillea Kellereri makes an attractive show with its beautiful silvery foliage and abundant clusters of snow-white flowers. It is odd that while this plant, so susceptible to winter dampness, seems thoroughly to enjoy a dripping summer, while other species and varieties usually considered more easily managed in winter, quickly pass out of flower in a sunless summer.

Putoria calabrica is an engaging little shrublet from Mediterranean cliffs, which has proved quite hardy in a well-sheltered, sunny niche for several years. It grows slowly, ultimately attaining eight inches, perhaps more. The leaves are pale green, narrow and glossy, and the flowers, which appear at this season in terminal clusters, somewhat like those of Daphne Cneorum, are pink and waxen.

Among the latest of the Erodiums to continue in bloom is the large-flowered, pure white E. amanum, said to be a form of E. absinthoides, a beautiful rock-plant both in foliage and flower. E. trichomanaefolium, of the lists, is also as full of blossom as it was at midsummer. E. guttatum is another gay little thing which shares the drier places with several others of its tribe, with the exception of the always delightful E. chamaedryoides and its two rose-pink forms, the light and the dark shade. The last trio appear to prefer a cooler root run and rather moister conditions than most of the Heron's-bills, and the shape and colour of the leaves suggest this. Those charming Geraniums, G. argenteum and cinereum, have maintained an unusually prolific crop of bloom, and G. Farrer's Pink (or whatever it may or may not be called) which was covered with blossom in early summer is again bearing a number of its lovely pearly blooms.

Down along the waterside one of the most beautiful of the smaller plants in flower is the North American Sedum pulchellum. There are few of its race to excel this splendid bog species which, however, is too often condemned to endure a lingering death by being planted along with others on some dry rock-garden slope. Another first-rate plant, hereabouts, is that giant form of Myosotis palustris known as Stabiana. This still makes a broad belt of pale blue along the margin of the stream, associating very happily with Mimuluses and Lythrums, among which latter L. alatum is distinctly elegant and of not so fierce a colour as our purple Loosestrifes.

There are few better autumn-flowering subjects for covering bank or boulder at the edge of the water than Polygonum vacciniifolium, choicest of all the Knotweeds, which seems to delight in all the moisture it can get Also on a cool, well-drained slope, in part shade, is a large colony of a clear yellow form of Viola lutea, found on a Welsh moor, a most willing and dainty little plant bearing scores of blossoms in interminable succession and having all the elegance and well-bred appearance of V. gracilis.

That curious plant Kirengeshoma palmata we also have near the water on a slope of well-drained soil, and its leafage has never been so handsome, nor its flowers so plentiful, since it was moved hither from the much drier soil of the woodland. Several of the Snakeroots (Cimicifuga) lend the dignity of their stately spires to this part of the garden, and of a somewhat similar habit of growth is Lysimachia clethroides, which blooms from midsummer to November But, excelling all of these and possibly any other flowering plant of its season in grace and dignity, is Dierama pulcherrima, whose wiry stems, rising to about four feet, each bears at its elegantly-drooping tip a shower of large, rose-pink bells. A well-grown group of this magnificent plant is worth going a long way to see, but there are considerable differences in the colour of the flowers, some of the purple shades being less pleasing than the clear pink and the white. Howbeit, in spite of its great beauty, hardiness and the freedom with which it can be propagated by seed, D. pulcherrima is comparatively rare in the average garden. This may be accounted for by the fact that it resents transplanting save when quite young. Even some nurserymen do not seem to realise this fact. *A. T. Johnson, Talycafn, N. Wales.*

PALMS OF THE RIVIERA*

Some errors (clerical or otherwise) have had the effect of altering what I intended to observe in my last article. Thus, of the several species of Caryota, which I have tried and intend to try here in the open, none is indigenous in South Africa. It should be South-China. Further, the well known known a partment Palm, so exceedingly graceful, known under the name of Cocos Wedelliana should be correctly called Syagrus Wedelliana, but it is not the same as Syagrus insignis, a Palm of slightly larger dimensions, and which also grows here in the most sheltered localities. Finally, I must add, concerning the Chamaedoreas, that the only climbing Palms which I possessed were two species of Chamaedorea, both having attained a length of some eight or ten metres, and climbing in trees. One of them presented a perfect transition to the well-known forms of the climbing Palms (Calamus and Desmoncus), where the folioles at the end of the leaves are transformed to recurved hooks of several centimeters length. In my Chamaedorea the folioles at the end of the leaves were of the shape of leaves, but quite narrow and curved back so that they served as hooks to retain the Palm in its position. I have always desired to try other climbing Palms here, especially the hardiest species of Calamus, but have never been able to obtain fresh seeds.

I have now finished my brief account of the Palms of the Riviera. At one time I succeeded in cultivating in the open in my garden about one hundred and twenty-five species and varieties, a large number as compared with the very small number of species usually found in gardens here. Still I feel convinced that nearly three hundred species and varieties of Palms could be cultivated in the most sheltered localities of the Riviera. Will anybody ever undertake this task? If so it will require great patience and many efforts, since many of the Palms, described as living in the mountainous regions of the tropics, have never been introduced into cultivation, while others seem difficult to cultivate outside of their habitats; for example, Juania australis from Chiloe Island, where, however, the climate is only warm-temperate.

Lately the abominable style of formal gardening has become the fashion here, as elsewhere, and in some cases old, splendid Palms, which would have commanded a high price, if only one had the chance to buy them, were cut down to give place to these ugly gardens of trees trimmed to the shape of walls, cubes, globes or what not—the very negation of nature's beauty. It is indeed sad to think that in some cases the past patient efforts of real plant lovers are thus brought to nought. I hope that such a foolish fashion will not last and that the only aesthetic and rational gardening—that of the natural style—shall again be esteemed at its real value.

The possibilities of gardening are greater on the Riviera than at any other part of the earth situated so far from the equator. The reader may judge from my brief notes on the Palms what extraordinary possibilities exist here; indeed there is no characteristic form of Palm which cannot be represented here by one or more species, be it the tall, straight-growing majestic Palms, the slender, gracefully-leaved forms, the climbing Palms and the small, exquisite Palms down to the diminutive forms.

Now, when I add, that what applies to Palms applies also to all other orders of plants, and that it is possible to cultivate here, side by side, the wonderful Silver Birch, a typical tree of a cold climate, and the Banana, a typical plant of the tropics, and perhaps the most beautiful of all plants—then the reader, who knows Riviera gardens will agree with me, that they are up to now very far from what they could be. *Dr. A. Robertson Proschowsky, Jardin d'Acclimatation, Les Tropiques, Chemin des Grottes, Fabron, Nice, France.*

NOTES FROM WISLEY.

Great improvements have been made in the field garden at Wisley, where some mounds have been levelled and a broad grass walk has been made. The lake banks, although planted with trees and shrubs, are still rather bare. This, however, will be remedied in time as the plants grow up. In addition to numbers of well-known species such as Neillia opulifolia, Rhus Cotinus purpureus, Cotoneaster horizontalis and Acer rubrum, which are all very decorative at the present time, many of the newer and lesser known species have been planted, as for example, Salix magnifica, with its very broad leaves, and Buddleia Forrestii.

In the far corner of the field garden are some of the white stemmed Rubus species, one of the best known of which is R. biflorus with its variety quinqueflorus. This has been attacked by a die-back fungus which threatens to exterminate it altogether. Another Rubus which has suffered, but to a lesser extent, is R. alexterius. The delicate foliage of some forms of the latter plant is completely covered with a velvet down, while the leaves of others are quite glabrous on the upper surface.

Of the shrubs in flower at the present time, Calycanthus floridus, noted for its hard, flower buds and vinegar-like scent, and Desmodium tiliaefolium are to be seen on the rock garden. The latter shrub has small Wistaria-like blossoms and is not considered quite hardy. Near the rock garden pools a specimen of Clethra alnifolia, which has attained a great size and covers a large area, is blooming. Its white, scented flowers are a happy hunting ground for bees and hover flies. Elsewhere Buddleia nanhoensis and Berberis stenophylla autumnalis, of pendant habit, are flowering, while bright autumnal colouring is to be seen in the foliage of Enkianthus japonicus and in Berberis Lycium with its cascade of brilliant red berries.

Several species of Gentian are in flower, such as G. asclepiadea, which runs riot in the wild garden. Of the rock garden species the sky-blue Gentiana Farreri is perhaps the most delightful, although the rich purplish-blue G. detonsa and G. Andrewsii, with silvered flowers, are very charming. In the rock garden also are to be found Gentiana lagodechiana together with G. Pneumonanthe. The latter may still be seen growing wild at no great distance from the Wisley Gardens; it flourishes on a peaty heath and is often known as the Calathian violet.

Two little rock plants in bloom, which are not common and which one may easily overlook, are Boenninghausenia albiflora and Lippia nodiflora. The latter belongs to Verbenaceae.

In spite of the atrocious weather there is quite a good show of Dahlias. In the large paeony-flowered section King of the Autumn is an attractive variety, and so are Janet, an orange-flowered single, and White Star. Among the few representatives of the anemone-flowered section Mons. C. H. Dupont stands out by reason of its vivid crimson ray petals, which pale to magenta at the edges.

A Daffodil trial will shortly be planted and the bulbs will receive hot water treatment to guard against eel-worm. *J. G. White.*

BULB GARDEN.

DEEP PLANTING OF SNOWDROPS.

In the latest issue of the *Journal* of the Royal Horticultural Society (Vol. XLIX. Part 2), in the course of his notes on plants which have received the Award of Garden Merit of the Royal Horticultural Society, Mr. Chittenden refers on page 234 to Galanthus Elwesii. The experience at Wisley will, doubtless, be of much value to some who have experienced difficulty with this fine Snowdrop. I do not desire to discuss the subject in general but merely to make a remark regarding the question of deep planting, incidently introduced by Mr. Chittenden, mentioning that G. Elwesii had been planted at Wisley eight inches deep.

My attention was first drawn to the question of deep *versus* shallow planting of Snowdrops by the following circumstance. In 1884, I acquired in the country a house, the garden of which was composed of very light, sandy soil. At the base of a Hawthorn hedge a a colony of Snowdrops had been established, and, as I wanted to make another use of this part of the garden, as many of the bulbs as could be found were lifted and planted elsewhere and the ground bastard trenched. In the process a few of the Snowdrop bulbs must have been overlooked and the following spring some of the plants appeared and flowered and others made some growth, flowering the following year. On lifting these I found that the original bulbs had been buried deeply by the digging operation and that adventitious bulbs had been formed higher up, the result, apparently of the desire of the Snowdrop to be nearer the surface. The process is analogous to the droppers of Tulips and some other bulbs, but, of course, with the exactly opposite result in view. I have seen the same thing with Snowdrops since, but I should like to know whether this has been observed at Wisley or other places. I think, however, that a good deal will depend upon the character of the soil, and I have long come to the conclusion that the arbitrary depth at which we suggest planting bulbs should be varied according to the nature of the soil—deeper in light and shallower in heavy mediums. *S. Arnott.*

TREES AND SHRUBS.

LONICERA SYRINGANTHA.

Of the many distinct species of Honeysuckle that have recently been introduced, this is one of the most graceful owing to the slenderness of all its parts, including stems, leaves and flowers. Had the leaves been large the flowers would have been greatly hidden, but as they are narrow and just under an inch in length, they do not hide anything. They are widest at the base of the current year's growth, and gradually narrow as growth proceeds till they are quite linear. Usually they are in pairs, but sometimes in whorls of three. The flowers seem to be confined to the middle of the current year's growth, and are produced in pairs from the axil of each leaf, so that four to six flowers appear in a cluster according to the number of leaves at a joint.

The flowers are lilac in colour and smell strongly of the Lilac. The red fruits ripen in August and onwards.

L. syringantha is a native of Western China, and is figured in *Bot. Mag.*, tab. 7989. It was still in bloom near the end of August in the garden of Lieut.-Col. Sir George Holford, at Westonbirt, Gloucester, although its usual time is May and June. It makes a tall, spreading shrub of very elegant habit. *J. F.*

---

* The previous articles by Dr. Proschowsky on this subject were published in our issues for May 1, June 12, July 10, September 4, November 20, December 18, 1920; March 12, April 30, June 11, October 8, November 19, 1921; January 21, February 11, April 1, June 17, July 20, October 17, November 11, December 23, 1922; March 10, May 5, September 20, 1923; April 26 and July 19, 1924.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

A NOVICE IN THE ALPS.

IV.—BLUMENTHAL.

NEVER was name better bestowed than that of Blumenthal, the upland valley which extends from Mürren steeply up to rugged mountains. The grassy way is bright with flowers and in the distance the lower slopes of the mountains are all golden. Although Blumenthal lies high—its lower levels are about six thousand feet and the mountain peaks perhaps two thousand feet higher, or even more—so well exposed is it that lowland plants, refusing to be kept in their places, accompany, and it must be confessed, vex the botanising alpinist in his quest of severely set alpine jewels. Yet the jewels are there. Hidden or almost hidden in the thick grass are several forms of Gentiana acaulis now beginning to seed and the lovely deep blue, white-throated, almost rosette-leaved Gentiana bavarica. With them is the yellow form of Viola calcarata scattered everywhere, ranging in colour from a full buttery-yellow to pale cream-yellow and here and there appearing almost white. Never does it take the purple or even mauve tones which it displays on the Furka. Only in the highest places the pale, almost white flowers, have a slightly mauve tinge. In the higher reaches of this open valley the ground is carpeted with seedling Anemone alpina and here and there, among the tall, long-awned red fruit heads, may be found a late flower. All those I saw were pure white although several out of range appeared to have a yellow tone. It would be interesting to know whether both the sulphur-yellow and the white-flowered forms occur here. It would not surprise me if they do, for though the mountains seem to be built of the older formations, some limestone must be there too, for otherwise the occasional Heaths would hardly be so poor and scrubby. Away on the higher ground to the left is Rhododendron scrub, still rosy with the flowers. It is the hairy-leaved, non-rusty R. hirsutum—the lime tolerant species, though in the next valley—nicely named Play-ground Valley—Spielbodenthal, R. ferrugineum abounds.

There is an excitement about alpine botany which even the indifferent cannot but share, and two chance companions were able to assuage the chaperonish solicitude of an aunt seated down below on a rock calling their return peevishly, by exclaiming that we were near the Edelweiss. That we never found, but in the evening, forgiveness for the subterfuge was won by a bouquet of Anemone narcissiflora. Spread wide over the grass is this gracious plant with heads of blossoms now of purest white, now white flushed with rose. And with the Anemone and getting more numerous with each step upward is Trollius europaeus, thousands strong. The valley walk ends frankly in a scramble over screes and loose boulders, graven into ravines first by the snow and ice and later by the water which flows from them; all seemingly now gone. Yet the eye may follow by the alignment of the plants, the course of underground streams. Thus Ranunculus aconitifolius runs down like a foaming mountain torrent from near the hill tops to the bottom of Blumenthal. In its lowest reaches it is such a poor weedy thing as to suggest a homily on the depth to which fine plants in unhappy circumstances, "like sweet bells jangling out of tune," may fall. Higher up it improves, bears larger flowers, but it deserves never a word of the praise which its Grinsel sisters earned from this unemotional pen. Who can say; perhaps lime is the villain of the piece and only in peat on granite formations free from lime does this fine plant unfold its reserves of beauty! Plant life in the high moraines of the Blumenthal is a precarious affair. To-day it puts forth the tender leaves of hope; to-morrow, blossoms; the third day comes . . . an avalanche or the stony ground commences to slide downward and the newly established plants fall like Wolsey, never to rise again. Yet there the morainers are. Hidden away beneath other things are the spiky, paired fruits of Soldanella borne on longish stalks and here and there, too, is a purple patch of Linaria alpina. Edging a little away from the moraine screes, perching on banks, are the mealy flower stalks of Primula farinosa, becoming small towzled heads of ripening fruits. Aligned a little way aback—safe on the grassy sides of boulders—are the two Gentians, and on the rock faces which still bear traces of the snow which covered them, are patches of the beautiful Ranunculus alpestris with much cut, glossy leaves and neat, white flowers. To find the best of all alpine Ranunculuses entails a walk and climb a little further afield behind the mountains which block the Blumenthal; there is the true Glacier Crowfoot, R. glacialis, a plant which contests the honour of the "all highest" with the Saxifrages—that most glacial genus of plants.

Up in the glacier region of the Swiss alps occur—so the books say—some sixty-one species of plants and of this number nine are Saxifrages. The winner in this race upward is disputed by the learned. Bouvier claims the prize for the two Saxifrages, S. retusa at 10,400 feet on Monte Rosa and S. moschata, two hundred feet below on Mt. Blanc; Professor Schröter, whose picture book of alpine flowers is most valuable to novices, boldly claims the height record for the glacier Ranunculus, at 4,270 metres, which is about 14,000 feet, and Correvon in his beautifully illustrated alpine flora confirms this claim to the extent of 4,000 metres. All these flowers of the Blumenthal seem to run down in lines of moisture gradients. Climb up along one of these lines and you meet, say, Trollius, and follow it upwards. Descend along another and you shall find no Trollius at all. Therefore the alpine botanists will do well to gather their rose buds while they may, for many of the best of them lie in longitudinal lines or in patches and it is only the few that straddle all over the way. A typical Mürren plant found everywhere, beginning below even at lowly Lauterbrunnen, 3,000 feet above sea level, and ascending well above 6,000, is Campanula barbata. Its hairy flower is generally of a pale porcelain blue, but sometimes deeper and sometimes white. People of good taste praise it but it has no charm for me; for more lovely and more admirable is the common C. pusilla, the most adept of all plants in finding lodgment and to form exquisite tufts on any recently land-slipped path of stony ground. Everywhere on such places are groups of it in pale and deep blue, each with a perfect cluster of blossom rising as a bouquet above the small leaves. C. pusilla, however, eschews the high life and reaches up to no more than 5,000 feet.

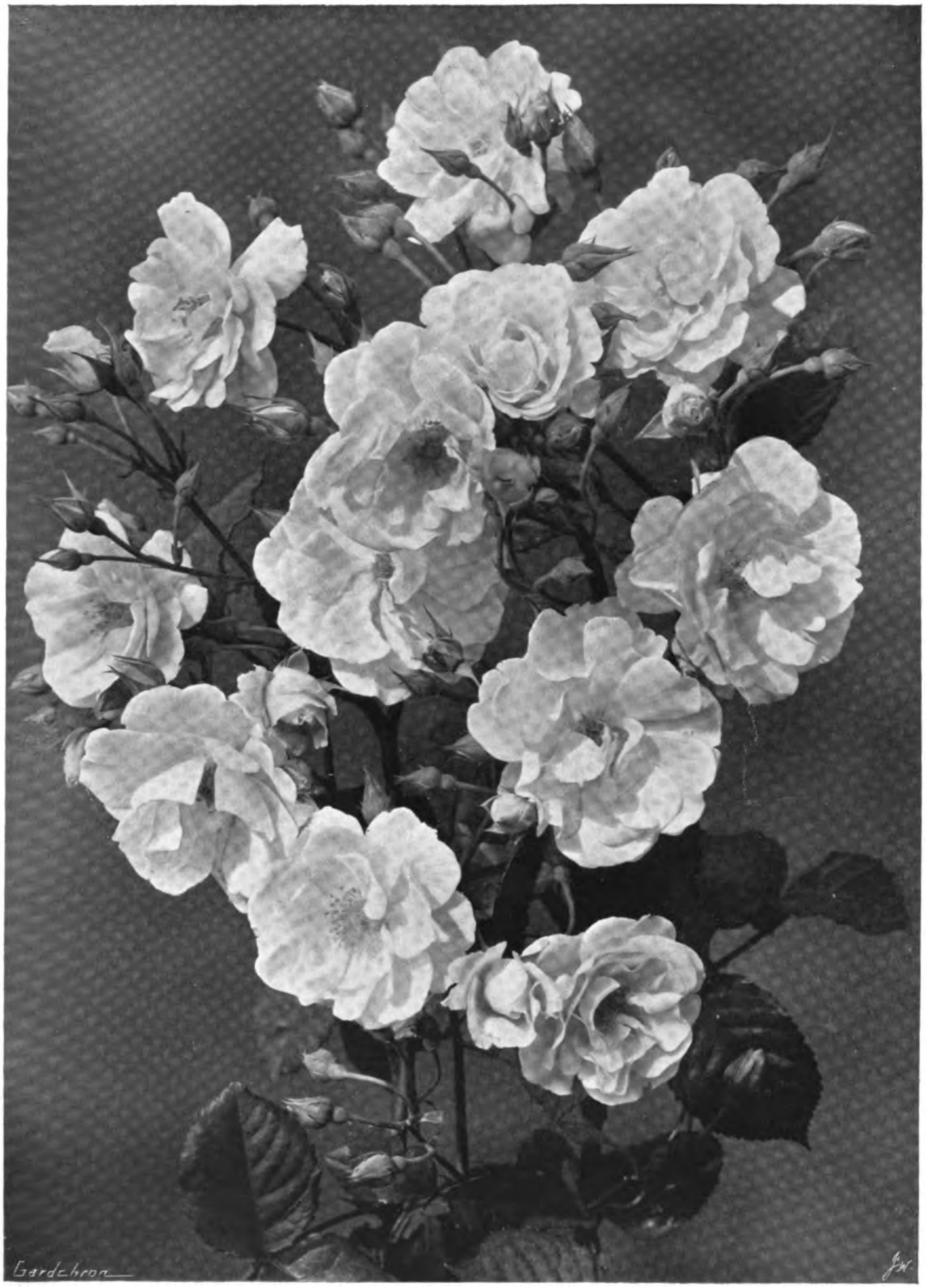
Other plants of the higher ground of the Blumenthal form a curious assemblage. There are Thalictrum aquilegifolium in full sun—a plant which by its leaves should dwell always in partial shade. Primula elatior is there to please the homesick and the magnificent orange-flowered Hawkweed, Hieracium aurantiacum, the dull echo of whose effulgent colour is supplied by Crepis aurea. Rich orange yellow is supplied by the Doronicum-like Senecio (S. Doronicum), and of course the ubiquitous and great-flowered Dandelion and the woolly Hieracium villosum. On the top-most rocks are occasional tufts of Silene acaulis and patches of Gypsophila repens—delicate in leaf and flower, but with root stock as long and strong as a weaver's beam. Alpine Forget-me-nots of deepest blue, Paradisia Liliastrum, a magnificent, crimson Vetch-like plant, Hedysarum obscurum and a lavender and white counterpart; Astragalus alpinus, Astrantias, the Alyssum-like, yellow-flowered Biscutella laevigata; a rare white star of the flower of Parnassia palustris, and alpine Willows wreathing green garlands around rocks so beset with leaves that the thick, tree-like stem which follows closely the contours of the stone is altogether hidden. Many another flower there is in this high alpine valley. Saxifrages and Sedums in many forms, and blue-flowered Globularias—but this way lies satiety and the dreariness of catalogues and so like Shakespeare's drawer I cry "Anon! anon Sir!"

THE ROSE GARDEN.

HYBRID MUSK ROSES.

(See Supplementary Plate).

WHILST all flowers are beautiful, and none can lay claim to greater beauty than the Rose, many subjects have such a short time of flowering that they are purely seasonal—Tulips and Auriculas for example. Others, including the Rose, give a longer display, but do not flower continuously through the summer and autumn. Roses are at their best in early summer and again in autumn, but in the hybrid Musk type we have a class of Rose that is continually in bloom right through the summer and autumn and, in favourable winters, as late as December. The Rev. J. H Pemberton who was the principal mover in getting the National Rose Society to hold an autumn exhibition, was impressed by the fact that the decorative Roses, which were chiefly confined to the Rambler section, were over before the autumn show, and it was for the purpose of obtaining a race of cluster Roses which bloom as well in autumn as in summer, that he introduced a new type embodying these requirements in the hybrid Musks. His first cross was made by fertilising an insignificant cluster Rose which bloomed in the autumn with a hybrid-Tea variety. His first notable success was the variety Daphne and later came Moonlight and then Danäe. When they were first raised these Roses met with but little public favour and he then used Rosa moschata as a parent, which, because of its perfume, Phillip Noisette had employed in the raising of his race of Noisette Roses. These hybrid Musk Roses are of a shrubby habit chiefly and some are dwarfer than others. The largest and tallest of these cluster Roses is the variety Vanity, which grows eight feet high and has a spreading habit. It is interesting to know that the dwarf bedding variety, Nur


Gardchron
J.W.

ROSE PENELOPE.

Mahal, was the result of the same cross as Vanity. In some climates, as in southern Ireland, and also in Australia, some of the Hybrid Musks may be treated as tall pillar Roses, but with us they are essentially shrub Roses and some are suitable for the forming of Rose hedges. They make strong basal shoots in mid-summer that flower in autumn, and the plants will continue in bloom until the winter frosts damage the flowers. Mr. Pemberton informs us that if the autumn is mild he is able to cut blooms of Moonlight (see Fig. 73), Pax and Prosperity in December. A peculiarity of this type of Rose is that the plants never send up a blind shoot and one can well imagine this to be true on reference to the illustration on this page showing a bed of the variety Moonlight in Kew Gardens. This hybrid-Musk, perpetual-flowering cluster Rose has white flowers flushed with lemon. It is of shrubby habit and grows about four feet to six feet tall and, being of a bushy habit, is very suitable for the making of Rose hedges. It is especially fine during the present month and will flower well into November. It has, in addition to its floriferous character, a fragrant Musk perfume. Penelope, which forms the subject of the supplementary illustration to this issue, is one of the newer varieties which Mr. Pemberton is distributing this season. It was shown in splendid condition at the metropolitan show of the National Rose Society and the material from which the illustration was prepared was taken from Mr. Pemberton's stand at that show. The colour is shell-pink shaded saffron. This variety has a dwarf, shrubby habit, and is very suitable for massing in beds. It flowers freely in the autumn. The foliage is dark green and the shoots claret coloured. This Rose also has a beautiful Musk perfume.

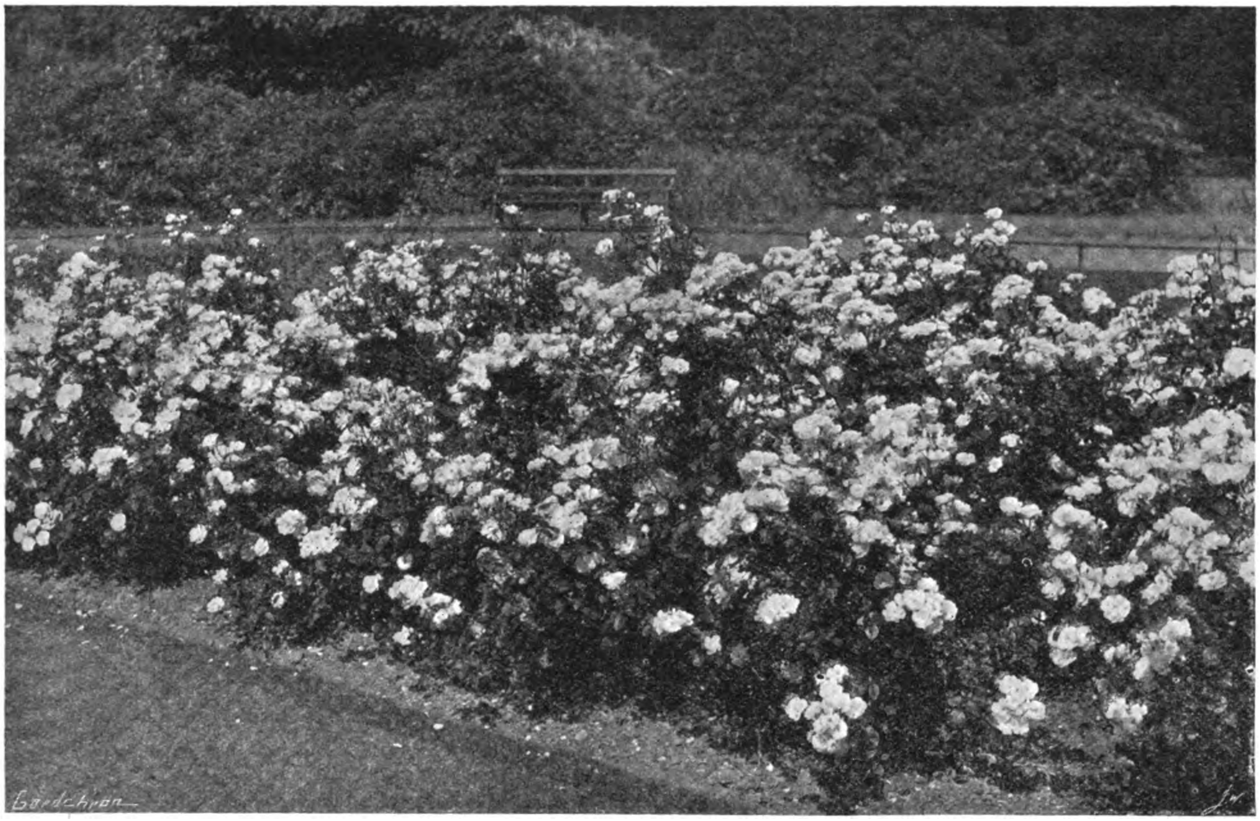


FIG. 73.—A BED OF HYBRID MUSK ROSE MOONLIGHT IN THE ROYAL GARDENS, KEW.

With regard to the cultivation of these Roses very little pruning is required, although it is necessary sometimes to thin the shoots and to shorten the stronger ones to one-third of their length.

RHODODENDRONS.

Cultivation.

(*Continued from p.* 125).

There is no reason why we should neglect aspect altogether. Even at low altitudes it doubtless plays a part; for though we uproot a plant from 13,000 feet and condemn it to penal servitude at sea level, we cannot expect it to slough all its little foibles immediately. It takes time to adjust itself.

As regards soil, in nature Rhododendrons are found growing on almost any soil, including limestone. But they are more exacting in this country, as though, having so much to put up with, they feel that at least some effort might be made to feed them suitably. Even so they will exist—not thrive—in almost any non-calcareous soil. In nature they grow in the forest where the soil, even when clay, is thoroughly impregnated with leaf mould, or on peaty moors, or more rarely on cliffs and in bogs. In fact any fairly substantial soil, with plenty of leaf-mould or humus to retain moisture and grit to keep it porous, is good. Loam and sand, or leaf-mould and sand, are excellent. Peat is neither necessary nor any advantage. The number of species growing in a soil at all comparable to what we understand by peat—the peat moss of Ireland and the Fens—is either very limited or nil. I have seen real peat bogs in Yunnan sheeted with flowers and surrounded by Rhododendron bushes; but the latter took care not to step over the edge. The bogs in which R. hippophaeoides and its little friends grow, are composed chiefly of silt and humus; they occur on the courses of mountain streams which are checked—not stopped—in their stride. The "peat" of the open moors is a fibrous loam with a good proportion of sand; and in the Pine forest the soil is nearly always a sandy loam.

Mr. Watson makes some very interesting and pertinent remarks on soil. With regard to the soil in one's own garden, he writes: "First be certain that the home soil is unsuitable before going to the expense of purchasing special soil for the plants." And again: "It is not the chemical composition of the soil so much as its chemical texture which decides whether it is suited to any particular plant." *

If the garden soil is unsuitable—that is to say, if it consists of a stiff, cold clay, or poor gravel, or contains an unseemly amount of lime, two courses are open to the Rhododendron grower. Some authorities recommend trenching to a depth of two feet and filling in with the prepared soil, Others, including Mr. Watson, recommend building up the prepared beds as a platform on the home soil. This last is nature's way. It should certainly be preferred in cases where the subsoil is calcareous, as there is then less danger of lime reaching the roots. In any case it is a more economical method.

In Yunnan many species of Rhododendron which heartily dislike limestone are found growing on platforms of humus spread over a foundation of limestone. Being shallow-rooted they are able to do this and remain scatheless.

On the question of limestone a few words are necessary. The Tibetan Marches are practically built of limestone; and as all the world knows—or at least that portion of it which devotes any serious attention to gardening—the Marches are covered with forests and thickets and carpets of Rhododendron. They grow in every conceivable situation, on cliff and scree and lawn and moor, in forest and bog and thicket, and even epiphytically. It would indeed be passing strange if, in a country made of limestone, none was found growing on limestone. Many, perhaps the majority, grow on a film of humus or loam, which overspreads the rock like a blanket. But there are some species which as certainly grow on the naked limestone itself. It is true that most of them belong to the smaller sorts, but they are by no means the least beautiful. I have myself seen R. cephalanthoides, R. sinolepidotum and several showy Lapponicums growing on bare limestone cliffs; to which may be added R. rubiginosum (which Mr. F. C. Stern has successfully cultivated on chalk) and several others.

---

* *Rhododendrons and Azaleas.* By W. Watson.

I have already hinted that if we could always be sure of growing our Rhododendrons on a long slope, we should lose fewer. I have also stated that they require shelter. Out of that arises a warning. Never grow them at the bottom of a hollow, or even on the slopes of a hollow, under the impression that shelter is thereby afforded. They will be far better off in the open than cooped up in such a death trap. Cold air will sink into and stay down in depressions of the soil. Rhododendrons dislike standing about, waist deep, in stale, clammy, stagnant air—it gives them "rheumatism." Still more do they resent a harsh, acid, costive soil at the roots, for it gives them "trench feet," and that is fatal. Far better let them stand up to all the winds that blow away the cold air than drown them in it.

As cultivated in Great Britain and Ireland, and indeed often in their own habitats, Rhododendrons are exposed to three tribulations:—

1. Autumn frosts which nip them while the wood is still soft and sappy. Result—the bark splits and death may follow.
2. Summer drought—the most fatal.
3. Spring frosts, which cut the blooms, and if the plants break early, may cut the foliage also; a far more serious matter. It is perhaps not much consolation to a man with a garden full of sick Rhododendrons to be told that these things happen in China too. Nevertheless, we may learn from the survivors some of the secrets of immunity. *F. Kingdon Ward.*

(To be continued.)

NOTICES OF BOOKS.

The Roses of Britain.*

Lt.-Col. A. H. Wolley-Dod has previously written two books on British Roses, or two treatises on the one subject, which were reprints from the *Journal of Botany* for the years 1908 and 1910. In the same Journal for 1920 he published a revised arrangement of British Roses, and from that arrangement he has evolved the present book, making alterations, improvements and adding new varieties and hybrids.

The new arrangement and the new combinations will give Rose collectors many evenings of work to bring their collections up-to-date. The method of arrangement adopted by the author is that of Crépin, with slight modifications. The new book now brings the Roses more on a par with the Willows, inasmuch as a separate name has been given to hybrids (now fully admitted), as well as indicating the putative parents so far as it was possible to do so, for the parentage is often complicated by the intermarriage of hybrids with species, forms or other hybrids. × R. glabra now includes R. hibernica var. glabra, and R. h. var. Grovesii, for there was nothing to separate them except stature, and that was not constant on Barnes Common.

Difficulties will still remain for collectors to solve in spite of the author allowing for variations from any given type. The writer of this review has two distinct hybrids in the R. hibernica group that do not fit in with any here described. One of them comes nearest to × R. Margerisonii but is quite distinct both in appearance and description. The late Mr. William Barclay, of Perth, said it was new, and he had cultivated the last-named hybrid. It is satisfactory to note that the author has named Mr. Barclay's unique find × R. Barclayi W-Dod, with the parentage R. spinosissima × omissa (var. suberecta).

IMPERIAL BOTANICAL CONFERENCE.

(Continued from p. 185).

"The Best Means of Promoting a Complete Botanical Survey of the Different Parts of the Empire" was discussed, the first paper being by Dr. A. W. Hill. The present position of the Botanical Survey of the Empire was briefly reviewed and the particular needs of the different Colonies were indicated, especially those of whose flora we are still largely ignorant. The need of sending out trained botanists to study the floras from the taxonomic and ecological points of view was urged and the importance of the economic aspect of the question was also indicated

If trained botanists are to be sent out to study the floras, then funds must be provided for the purpose, and it was suggested that though it is not difficult to point out what is required, it is difficult to know where to turn for the necessary financial assistance. A complete survey includes the whole vegetable kingdom and thus entails the need of men qualified to study the lower as well as the higher plants. Much help may be expected from travellers and from officials keen on botanical studies, but only rarely do they supply all the information required to enable the workers in herbaria at home to compile fully satisfactory records. Training courses for such helpers in the work were suggested. Government assistance is required in order that it may be possible to send out trained botanists as collectors, and also assistance is needed in the future, as it has been given in the past, from those governments, the floras of whose countries are being compiled at home.

In order to keep the overseas botanists engaged on systematic work fully conversant with the needs of the worker in the herbarium, and, conversely, in order to afford the worker at home an opportunity of examining in the field the flora of the region which is his particular line of study, it was proposed that some arrangement for a temporary exchange of workers between home institutions and the colonial botanical centres should be arranged.

Lt.-Col. A. T. Gage, I.M.S., spoke on "The Best Means of Promoting a Complete Botanical Survey of the Different Parts of the Empire." Disregarding as impossible to consider within the time limit the Indian field and the work so far accomplished, for excellently brief accounts of which Hooker's *Sketch of the Flora of British India* (1904) and King's *Sketch of the History of Indian Botany* (1899) may be consulted, a brief glance at the general means employed in the past seems most likely to yield suggestions for the future. Investigation of the Indian flora on scientific lines began about 150 years ago by a small number of men forming the "United Brotherhood," whose aim was the promotion of botanical study. The latest stage has been marked by the formation within the last few years of "The Indian Botanical Society" and the founding of the *Journal of Indian Botany.* While both the beginning and end of the period have been marked by outward signs of union, association between botanists within and without India have permeated the development of the science and been of vast benefit to it all through the period. On this basis the possibility of the formation of an Imperial Botanical Union or Association was suggested for discussion by the Conference.

It was realised that unless, and until, the Conference considered this suggestion worth discussing, it would seem needless to enter into details, but a few general ideas were mentioned, such as that the Union or Association should include not merely systematic botanists, but all who were interested in the green mantle of the earth.

(To be continued).

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 79-84).

(Continued from p. 169).

ENGLAND, MIDLAND COUNTIES.

Oxfordshire (*continued*). — Apples and Plums, after the wonderful show of bloom are very disappointing, and less than half an average crop of each kind has set. Late Apples, including Lane's Prince Albert, Bramley's Seedling, and Tower of Glamis have good crops of clean fruit. Choice Dessert Apples are very scarce and we have but few Plums. Czar, Victoria, and most of the Damsons on standard trees have good crops. Gages on walls are a very thin crop. Pears are plentiful. Morello Cherries are fair but sweet Cherries were very poor. Peaches out-of-doors are good and the trees have made good growth. Small bush fruits, especially Currants and Raspberries, were heavy crops. Strawberries were very good in this district generally, but very poor in this garden. *Ben Campbell, Cornbury Park Gardens, Charlbury.*

——After a cold winter and spring all fruit trees were late in flowering. Apples bloomed well but the fruit failed to set satisfactorily. Pear trees developed an abundance of flowers, but Pears are only an average yield, caused by frost and very cold east winds. Strawberries were very good, but only an average crop; other small fruits were up to average. All fruit trees are wonderfully clean, but have made slow growth, and it is a very disappointing season. Our soil is a light loam on gravel and chalk. *J. A. Hall, Shiplake Court Gardens, Henley-on-Thames.*

——The fruit crops in early spring looked very promising, but owing to continuous rains and late frosts most trees have crops under the average, especially Apples, Plums, Cherries, Apricots and Nuts. Small fruits were very good. We had an abundance of Currants, Gooseberries, and Raspberries. Strawberries would also have been very good, but late frost in June damaged the bloom. Our soil is heavy with a subsoil of clay. *B. Elkington, Wardington Lodge Gardens, Banbury.*

Staffordshire.—There was a very large amount of blossom on all fruit trees in this district, and a large quantity of fruit was expected, but cold rains interspersed with hail storms in spring, caused many of the trusses to rot. The earlier-flowering varieties of Apples are the best cropped. A quantity of Damsons are grown in this district but there is a very sparse crop of this fruit. Fruit trees on walls are very well cropped, especially Pears, but bush trees had a bad attack of Pear midge. Aphis was troublesome early in the season, also caterpillars, but the trees have made clean growth. To sum up, the fruit crops are fair. *J. W. Miskin, Woodseat Gardens, Rocester.*

——Apples are a fine crop, especially late varieties. Of Pears we have a good average yield. Plums are very scarce; the trees developed very little blossom. Peaches and Nectarines are average crops. Raspberries, Black Currants and Gooseberries were extra good, but Red Currants were a light crop, which is very unusual for these fruits here. Strawberries were a good average crop of fine quality. Our soil is a sandy loam on sandstone *Herbert Cragg, Aldershawe Gardens, Lichfield.*

Warwickshire.—The general fruit crops, with the exception of Apples and Plums, are eminently satisfactory. Apples have been very disappointing. The bounteous show of blossom on most varieties was followed by one of the poorest sets of fruit in my experience, due, doubtless, to the cold and wet conditions obtaining at flowering time; Apple mildew is on the increase in this district. A further feature is the absence of leaf-curling Aphis on Plums and slug-worm on Pears. *Ben H. Martin, Moreton Paddox, Warwick.*

---

* *The Roses of Britain.* By Lt.-Col. A. H. Wolley-Dod, London: Printed and Published by Taylor and Francis, Red Lion Court, Fleet Street, London. 1924. Price 5s. net.

——The fruit crops are fair in general. Apples and Pears seem badly affected with blight, which causes the leaves to fall, and the disease also marks the fruits badly. Some of our Apple trees in July had an October appearance, the ground being practically covered with dead leaves. *N. W. Priaulx, Allesley Hall Gardens, Allesley, Near Coventry.*

——The fruit crops generally in this district are an average quantity, with the exception of Plums, which are almost a failure, due principally to bad conditions last year and attacks of Aphis and other pests last autumn. Pears are not so plentiful as were anticipated earlier in the year, a quantity of fruits having fallen, but on the whole, Pears will be an average crop. Several varieties of the choicer Apples, including Cox's Orange Pippin, are poorly cropped. Raspberries were the best crop we have had for several seasons and Black Currants were better than usual. *H. F. Smale, Warwick Castle Gardens, Warwick.*

ENGLAND, S,

Berkshire.—All fruits are carrying average crops of good quality and the trees are cleaner than usual. Plums are good on walls only. Pears are a full crop. Strawberries were very good, especially The Duke, which is a splendid cropper and suitable for market work. Apples are an average yield and some varieties required thinning. Young Apricot trees cropped well and the crops needed thinning. Our soil is light, on clay. *A. B. Wadds, Englefield Gardens, Reading.*

——With the exception of Apples the fruit crops are of average quantity. Although Apples promised well at the flowering season the fruits, with some exceptions, failed to set. Lane's Prince Albert, Bramley's Seedling, and Tower of Glamis among the culinary varieties have average crops, and Langley Pippin, Irish Peach, and Worcester Pearmain among dessert sorts. Fruits of Cox's Orange Pippin are scarce, some trees being quite bare of fruit; Blenheim Pippin is a failure. Bush fruits have been plentiful and good. Walnuts are over the average yield. Some varieties of Plums are heavily cropped but Victoria is a failure. *J. Howard, Benham Park Gardens, Newbury.*

Dorsetshire.—Several sorts of Apples are carrying good crops, but many trees are nearly barren of fruit, which is very disappointing after such a wealth of blossom. An excessive amount of rain and cold winds are responsible for the failure. Pears are more plentiful than for several seasons. Plums and Damsons are very scarce. Gooseberries and Black Currants were both heavy crops. Strawberries were good. Our soil is light and chalky and soon dries out. *Thos. Denny, Down House Gardens, Blandford.*

——The fruit crops are disappointing following the splendid show of blossom and what appeared to be a good set of fruits. The weather in May and the first week of June was very wet, with severe hailstorms, and the fruit began to drop in those months and has been dropping ever since. Plums and Cherries, with the exception of a few Morellos, al fell from the trees. Apples are an average crop although a few trees have failed to crop. Pears are badly marked and not at all clean. Small fruits generally were very good. *W. E. Axford, St. Giles Gardens, Salisbury.*

(*To be continued*).

HARDY FRUIT GARDEN.

TWO EXCELLENT PEARS.

The nine years that have elapsed since the Royal Horticultural Society granted an Award of Merit to Laxton's Superb Pear have but served to prove beyond doubt the wisdom of the award. It is a very early variety, ripening rather before Williams' Bon Chrétien, and has a fine flavour. The parents of this Pear were Beurré Superfin and Williams' Bon Chrétien—the good qualities of both being more or less embodied in Superb.

A more recent production by the same firm is Beurré Bedford—the result of a cross between Marie Louise and Durondeau. It is a free cropper and the fruits are ready in October. The colour is yellow, with a large patch of russet brown which give the fruits a distinctly handsome appearance. The flavour is very good and the flesh juicy. *C. Turner.*

WASHINGTON PLUM

This Plum, which is also known as Bolmar, and Franklin, is often a shy bearer, especially on young trees. Mr. Wadds (p. 170) mentions this variety, amongst others, as carrying a good average crop of fruit this season, and he advocates root pruning and summer pruning as a means of inducing fruitfulness. My experience with this Plum is not extensive, but I have failed to obtain good crops by ordinary methods of pruning on trees growing on west walls. My experience has taught me that the branches of this Plum should be allowed plenty of space so that the very broad foliage is fully exposed to light and air; also that frequent pinching of the young shoots during summer promotes the formation of fruit buds. Trees treated thus have, after several years, a somewhat unkempt appearance owing to the elongation of the spurs. Washington is a delicate Plum, large, and of very pleasing colours, and repays the trouble necessary to bring it to perfection. *Colin Ruse, Hyde Gardens, near Luton.*

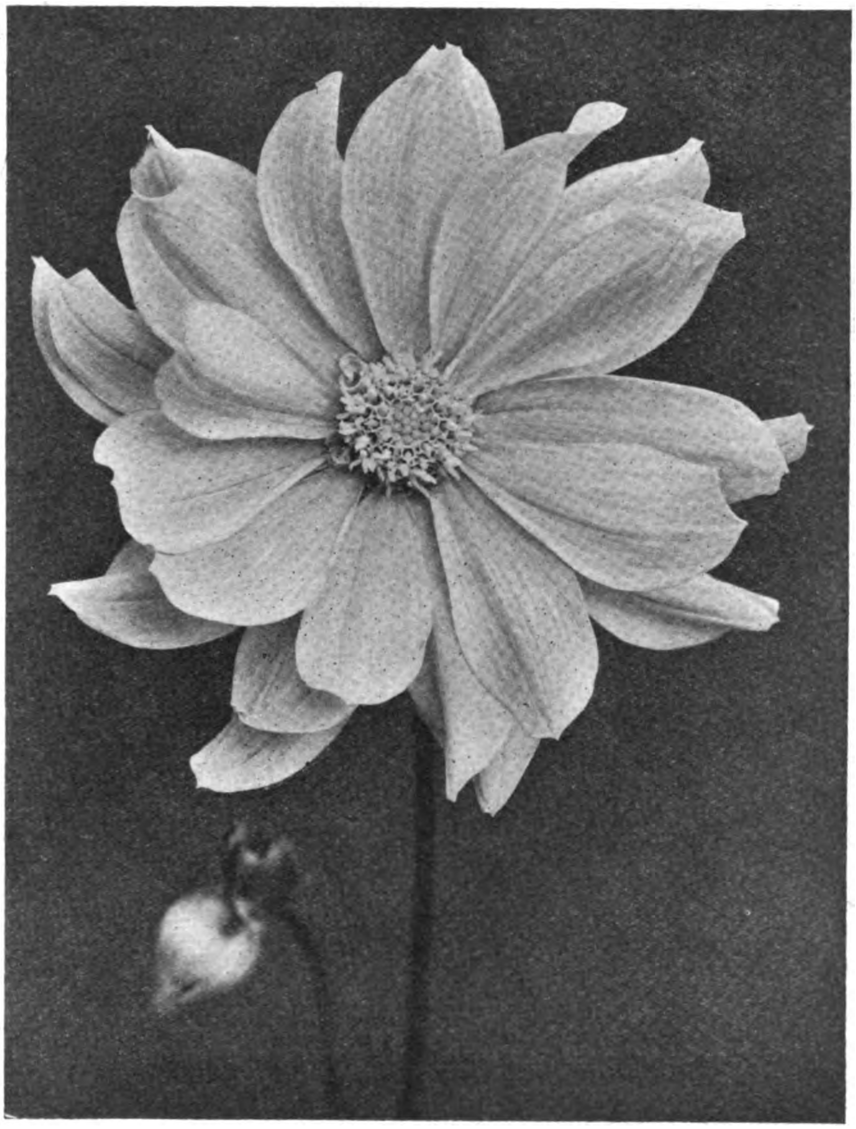


FIG. 74.—DAHLIA MRS. SKEVINGTON

Raised by Mr. Cobb and selected for trial at Wisley (see p. 189).

VEGETABLE GARDEN.

LEEKS.

I am much interested in the letter of Mr. Geo. M. Taylor respecting Leeks which appeared in *Gard. Chron.*, Sept. 6. In reply thereto my authority for the statement that the Musselburgh Leek was raised by Mr. Thos. Handasyde, is the following, which appears in the *Agriculturists' Manual* of Messrs. P. Lawson and Sons, Edinburgh, 1836. On page 410, in acknowledging various gifts to their museum, they state:—"By Mr. Thomas Handasyde, seedsman and florist, Fisherrow, specimens and seeds of the new

Musselburgh Leek; a very superior and improved variety, raised by him." From the scrupulous care displayed by Messrs. Lawson in the preparation of their valuable work I had no reason to doubt the accuracy of their statements. Mr. Taylor would do a service to vegetable nomenclature if he would send a small sample of seed of the true variety of Musselburgh Leek mentioned by him to Mr. Chittenden, Director of the R.H.S. Gardens, Wisley, Ripley, Surrey, so that it could be tested, and all its characteristics noted in the records of the society for future reference. It would have been of great service to the judging sub-committee at the recent trials of Leeks. *S. B. Dicks.*

HOME CORRESPONDENCE.

Apple Orchards in Devon.—It is commonly held that of all English counties Devonshire is the one for Apples, and certainly very fine fruit may be found there. This, however, is only one side of the picture. Every advantage for good culture exists, yet it cannot be denied that in any other county is there so much wide-spread neglect of proper care and treatment. I have met with no one who denies this neglect. Trees run wild and are literally hung with moss and lichen; even dead trees encumber the ground. Indeed, trees that apparently may have been dead for years are to be found between Paignton and Brixham. I have for a long time made enquiry concerning the reason, why for years past and up to the present, there has been so much undisputed neglect. I could not vouch for its accuracy, but I have had only one reply. I was informed that rent is raised directly any improvement is made by the tenant, who wonders at once why he went to the expense and why he took the trouble. It is best to take what heaven sends as conditions are! It may be said, and no doubt with truth, that it is the cider Apple trees that chiefly suffer neglect, but it is difficult to think that in this there is any justification, for in a small country like ours we cannot afford to neglect any of our resources. I have further to admit that it is impossible for me, circumstanced as I am, either to make efficient enquiry or to hear all that may be said, but "he who runs may read" the facts, and my impression is that there should be a wholesale grubbing up of trees, with no attempt to raise a single half-fallen tree, and then to re-plant under expert advice as to site and selection of variety. *R. Irwin Lynch, Torquay.*

Tulip Arethusa.—We have been following with considerable interest the recent articles on Tulips contributed to *The Gardeners' Chronicle* by *R.K.* and the Rev. J. Jacob. We were, however, very sorry to notice on page 74 of your issue of August 2 Mr. Jacob's statement that Cottage Tulip Arethusa may be obtained from a certain Dutch firm. We can only imagine that Mr. Jacob must have been unaware that this Tulip can be bought equally well from English firms, thereby supporting his own countrymen who have to pay British rates and taxes and who also employ British labour. In a word, supporting the home grower in preference to the foreigner. *Bulb Growers.*

Cropping Capacity of Potato Sharpe's Express. — A few weeks ago I lifted my crop of Sharpe's Express Potato and obtained fourteen bushels from fourteen pounds of Scotch-grown seed. I would be pleased if any readers of this Journal would give their experience as to the cropping capacity of this variety, as it is generally supposed not to be a heavy cropper. Is the above result a record? Ordinary planting was adopted and the large sets were merely cut into halves. *A. P*

SOCIETIES.

NATIONAL DAHLIA.

SEPTEMBER 10.—The aunual exhibition of the National Dahlia Society, held at the Royal Horticultural Hall, Vincent Square, proved a great success, and the society is to be congratulated upon the high standard of the exhibits. In spite of the bad weather, the quality of the flowers was excellent and many of the classes attracted keen competition. There is one criticism we should like to make, viz., that exhibitors, in the competitive classes, should not be allowed to remove their exhibits after judging to other parts of the hall. By so doing it is difficult to obtain a full record of the show and adds greatly to the labours of the reporter.

The show was opened by H.R.H. Princess Louise, Duchess of Argyll, who was received by Lord Lambourne, President of the Royal Horticultural Society.

The Joint Dahlia Committee sat in the morning and recommended the following varieties for trial at Wisley:—

Nigra.—A small, Paeony-flowered variety of deep crimson colour and dark metallic foliage.

Shinfield Star.—The colour of this Star variety is rich vermilion with the tips of the florets flushed with mauve. This and the above variety were shown by Mr. A. J. COBB, University College, Reading.

Anita.—A dainty, small Paeony-flowered variety with lilac-mauve colour predominating, while the centre of the flower is marked with crimson on an amber-yellow ground. Shown by Mr. CHARLES TURNER, Slough.

Mary.—This variety belongs to the small Paeony-flowered section; the colour is a rich velvety deep crimson.

Irina.—The colour of this small Paeony-flowered variety is a striking shade of bright rose with a circle of orange-scarlet around the centre of the flower.

Freda.—A deep maroon-crimson Decorative variety.

Tamara.—Of glowing rich scarlet colour, this variety belongs to the small Paeony-flowered section.

Glamour.—A small, Paeony-flowered variety of a dazzling shade of vermilion-scarlet.

Lucina.—The colour of this small Paeony-flowered variety is amber-buff marked with orange-crimson at the base of the florets.

Persis.—A pretty, small Paeony-flowered variety of mauve colour on orange ground.

Endora.—Another small Paeony-flowered variety of rich vermilion colour.

Molly.—The colour of this Paeony-flowered variety is bright rose-mauve.

Kate.—This small Paeony-flowered variety has a yellow ground colour, the florets being flushed with mauve at their tips. This and the above nine varieties were shown by Messrs. J. BURRELL AND CO., Cambridge.

Princess Louise.—A very large-flowered white Decorative variety.

Fred Ransome.—A Decorative variety of rich crimson colour.

Dragoon—This Cactus variety is of good size, the colour of the long florets being lilac-rose shading to white at the bases.

Adorable.—A unique colour of coppery-red and buff shades, shading to white at the tips of the florets. It is a Decorative variety.

White Eagle.—A charming Decorative variety of good texture and pure white.

Radio.—A Cactus variety of a pleasing shade of amber-yellow.

Hawthorne.—A white Cactus variety with narrow florets.

Mrs. Meadows.—A large Decorative variety of rich rose-lilac colour.

Romeo.—A striking Cactus variety striped and splashed with crimson on a coppery-bronze ground.

Dr. Grace Nevill.—This beautiful Decorative variety has large, well-formed flowers of sulphur-yellow colour. This and the above nine varieties were shown by Messrs. J. STREDWICK AND SON, St. Leonards-on-Sea.

Mrs. Eustace Perry—A Collarette variety of rose-scarlet colour and with a white collar.

Burstow Star.—A very striking Star variety; the colour is bright rose marked with crimson at the base of the florets.

Lady Heath.—This Paeony-flowered variety is of large size and of rich lilac colour This and the above two varieties were shown by Messrs. J. CHEAL AND SONS, Ltd.

Acme.—A fine Cactus variety; the florets are long and incurved and the colour is bright rose shading to yellow. Shown by Mr. H. SHOESMITH, Guildford.

OPEN CLASSES.

The Class for twenty-four show and fancy Dahlias attracted but one exhibitor, Messrs. W. TRESEDER, Ltd, Cardiff, who were awarded the first prize for a superb collection containing many of the oldest varieties. John Hickling, yellow; James Cocker, purple; Mrs. Gladstone, shell-pink; John Walker, pure white; and Nansen, orange-scarlet, were a few of the outstanding blooms. In a similar class for twelve blooms, Messrs. J. CHEAL AND SONS, Ltd., the only exhibitors, were awarded the first prize.

Of the two competitors in the class for twenty-four distinct Cactus varieties, Mr. H. WOOLMAN, Shirley, Birmingham, led with a superb collection of blooms remarkable for their size and purity of colour. Signal, orange-scarlet; Valour, rich terra-cotta, Mrs. C. A. Gillatt, rose-mauve and Stiletto, yellow, were all in excellent condition. Messrs. J. STREDWICK AND SON, St. Leonards, on-Sea, were second, with a highly creditable collection. The last-named competitors were the only exhibitors in the class for eighteen Cactus varieties, six blooms of each, and for this praiseworthy collection they received the first prize.

For twelve Cactus varieties, Messrs. W. TRESEDER, Ltd., took premier honours and were closely followed by the other competitor, Mr. W. G. CRAMP, Streatham, while in the class for six blooms of one variety, Messrs. J. STREDWICK AND SON led with superb specimens of Mrs. Walter Jackson, rose and apricot, the second prize going to Mr. H. WOOLMAN, with the variety Abbotsford. Messrs. J. CHEAL AND SONS, Ltd., were the sole competitors in the class for twelve varieties of garden Cactus Dahlias, six blooms of each arranged with hardy foliage, grasses, or berries. The first prize was awarded to this collection which was admirably arranged.

Messrs. J. CHEAL AND SONS, Ltd., were also the only competitors in the classes for twenty-four varieties and twelve varieties of Pompon Dahlias, ten blooms of each, while in the class for six large-flowered Paeony varieties, distinct, six blooms of each, the same competitors were again awarded first prize with fine blooms of Lady Greer, rich rose-pink; Luna, yellow; and Mrs. Lindsay Smith, light pink. The second prize went to Messrs. W. TRESEDER, LTD. Messrs. J. CHEAL AND SONS, Ltd., were also first in the class for six varieties of small Paeony-flowered Dahlias, the blooms of Defiance, rich orange-scarlet; Rosie, pink; and Lucifer, scarlet, being of outstanding merit. Mr. A. J. COBB, the other exhibitor in this class, was second.

The chief honours in the class for six varieties of large Decorative Dahlias, six blooms of each, fell to Mr. H. WOOLMAN, who was an easy first, and exhibited magnificent blooms of Constance, rose-purple; President Wilson, rich scarlet, and Mrs. E. Clark, of burnt amber colour, with the florets prominently tipped with white. Messrs. J. CHEAL AND SONS, Ltd., and Messrs. W. TRESEDER, Ltd, were second and third respectively.

For six varieties of small Decorative Dahlias, nine blooms of each, Messrs. J CHEAL AND SONS, Ltd., led with good vases of The Maid, white; Raider, apricot-buff, and Reginald Cory, scarlet and white. Messrs. Treseder, Ltd., were second. The class for three blooms of the Decorative Dahlia Rosella Amos attracted three competitors, the order of merit being Mr. A. E. Amos, Mr. A. Amos and Mr. S. Amos, all of Colchester.

There was very keen competition in the class for twelve Collarette varieties, distinct, ten stems in each vase, and Messrs. J. Cheal and Sons, Ltd., led with a capital collection, Scarlet Queen, scarlet and yellow; Admiral, maroon and white; Mrs. Carr, orange, scarlet and yellow, and Diadem, rose-purple and white, being exceptionally fine. Mr. H. Woolman was second, and Messrs. W. Treseder, Ltd., third. Messrs. J. Cheal and Sons, Ltd., were also first in the class for six Collarette Dahlias, six blooms of each, restricted to varieties not exhibited prior to 1920, as well as for twenty-four distinct varieties of single Dahlias, ten blooms of each.

AMATEUR CLASSES.

The amateur classes were well represented, and Mr. A. T. Barnes, Bedford, was the first prize winner in the class for twelve show and fancy varieties. In a similar class for six blooms, Mr. H. Langdon, Shenfield, was first. Of the four competitors in the class for twelve Cactus Dahlias, distinct, Mr. W. E. Cramp Streatham, was awarded the premier prize, while Mr. F. Chennells, Wheathamstead, was first in a similar class for six distinct blooms. Mr. W. E. Cramp was also successful in the class for twelve Cactus blooms in four varieties.

Mr. A. T. Barnes led in the class for six varieties of Pompons, six blooms of each, and Mr. A. Brown, Seagrave, was the premier prize winner in the class for six varieties of single Dahlias.

For six varieties of Star Dahlias, six blooms of each, Mr. M. Howard, Chesham, was first, and Earl Beatty (gr. Mr. A. Barrett), Reigate Priory, led for four varieties of large Decorative Dahlias, while in the class for four varieties of small Decorative and miniature Paeony-flowered Dahlias Mr. M Howard was placed first.

Mr. A. Brown was the most successful competitor in the classes for six Collarette varieties, six blooms of each, and for six Collarette varieties, three blooms of each.

In the classes devoted to amateurs who have never won a first prize at any previous exhibition held by the Society the principal awards went to Mr. S. Amos, Colchester, and Mr. F. Chennells, Wheathampstead; while in the classes open only to amateurs who do not employ any gardener, Mr. A. Brown, Seagrave; Mr. M. Howard, Chesham; Mr. A. T. Barnes, Bedford, were the chief prize winners.

ARTISTIC CLASSES.

In the open artistic classes, Messrs. W. Treseder, Ltd., were first for a decorative vase of Paeony-flowered Dahlias, and they were also successful in the class for a vase of Dahlias. For a bowl of pink Dahlias, Mrs. E. M. White, Bishopstoke, led with a very effective arrangement.

The class for a table decoration of Star Dahlias, arranged in a space of six feet by three feet, attracted keen competition, and Mr. D. B. Crane, Highgate, N., secured the first prize with a very bright arrangement of creamy-yellow and scarlet varieties. Messrs. W. Treseder, Ltd., were second, and Mr. M. Howard was third, the last-named having a novel and pleasing combination of fruiting sprays and growths of Blackberries arranged with his flowers.

In a similar class for a Table decoration of Dahlias, excluding Star varieties, Messrs. W. Treseder, Ltd., were first, employing the rose-red miniature Paeony-flowered variety Mary Poynter, intermingled with Croton leaves, Asparagus foliage and Briza maxima. Mrs. R. Courtney Page, Enfield, followed a close second with a neat arrangement of apricot-mauve flowers combined with a scarlet-fruited Berberis.

Mr. D. B. Crane was first for three vases of Dahlias suitable for the decoration of the sideboard, using the scarlet Coltness Gem with fine effect. Mr. J. Emberson, Walthamstow, was second, and Messrs. W. Treseder, Ltd., third.

In the classes open only to lady members and the wives and daughters of members, Mrs. E. M. White was first in the class for a basket of Dahlias arranged with foliage; Mrs. Courtney Page was second, the last-named exhibitor gaining the first prize for a vase or bowl of Dahlias in any shade of mauve. Mrs. E. M. White was first in the class for a vase of Dahlias, any variety of colour.

TRADE EXHIBITS.

The trade exhibits were of exceptionally high quality and in addition to those which were on view the previous day at the R.H.S. meeting, Messrs. H. Woolman, J. Burrell and Co., H. J. Jones, Ltd., W. Treseder, Ltd., Jarman and Co., J. Cheal and Sons, Ltd., Charles Turner and J. T. West all staged noteworthy groups. The following medals were awarded:—

Large Gold Medal.—To Messrs. H. J. Jones, Ltd., Lewisham.

Gold Medal.—To Messrs. Dobbie and Co., Edinburgh;to Mr. J. T. West, Brentwood; to Mr. A. J. Cobb, University College, Reading; to Messrs. J. Burrell and Co., Cambridge; to Messrs. J. Cheal and Sons, Ltd., and to Messrs. Sutton and Sons, Reading.

Silver-Gilt Medal.—To Messrs. J. B. Riding, Chingford; to Mr. H. Woolman, Shirley, Birmingham; to Messrs. Jarman and Co., Chard; to Messrs. W. Treseder, Ltd., Cardiff; and to Messrs. Carter Page and Co., Ltd., London Wall.

Silver Medal.—To Mr. Charles Turner, Slough; and to Mr. K. Velthuys, Hillegom, Holland.

NATIONAL ROSE.

September 11 and 12.—The executive of the National Rose Society is to be congratulated on the success which has attended its innovation in connection with the Autumn Rose Show. It must have required no small amount of confidence and, may we say daring? to decide to hold its autumn show in tents at the Royal Botanic Society's garden at Regent's Park and to continue it for two days. Such a forward policy deserved success and we are pleased to be able to chronicle an unqualified success. In view of the inclement weather of late the Society must have had misgivings, but the first day broke fine and continued so with welcome bursts of sunshine during the afternoon. There was a good attendance and the quality of the blooms exceeded the most sanguine expectations of the enthusiasts.

There were many new seedling Roses for consideration and this section proved to be a great triumph for Messrs. S. McGredy and Son, who received all the awards—two Gold Medals and six Certificates of Merit.

The Cory Cup competition for the best New Seedling Climbing Rose of the year, raised by a British grower, which has been open at all the Society's show, was concluded, and we understand the valuable cup was awarded to Phyllis Bide, the lovely climbing Polyantha Rose raised by Messrs. S. Bide and Sons. This variety received a Certificate of Merit a year ago and the higher award of a Gold Medal at Glasgow last month.

The Silver-Gilt Medal for the best bloom in the nurserymen's classes was awarded to Mrs. Murray Allison, a magnificent pink H.T. of perfect form, shown by Messrs. D. Prior and Son. In the amateurs' classes a large bloom of Candeur Lyonaise, shown by Mrs. C. E. Whitcombe, won the medal.

GOLD MEDALS.

Mabel Lynas.—This brightly-coloured Rose is described by the raisers as being a "Pernetiana with scent." The rich, velvety crimson, which has a decided touch of maroon, suggests fragrance and one is not disappointed, for it was distinctly the sweetest of the new Roses. The flowers are large for the type. They are fully double, of good form and well carried on long stems above good dark green foliage. Shown by Messrs. S. McGredy and Son.

Norman Lambert.—A hybrid Pernetiana of somewhat small size but good shape and fully double. The colour may best be described as being a golden terra-cotta. It appears to be a very free-flowering variety and is pleasantly fragrant. Shown by Messrs. S. McGredy and Son.

CERTIFICATES OF MERIT.

Dorothy King.—This is a brilliant H.T. variety with two rows of substantial petals and a small golden centre. The colour is a scarlet-crimson lightly flushed with maroon. It should make an excellent bedding variety, and as the petals are substantial the flowers would last well when cut. Shown by Messrs. S. McGredy and Son.

Eva Eakins.—A small hybrid Pernetiana of exceeding brilliance. It is fully double and of velvety scarlet colour with a touch of golden yellow at the base of the petals. Even in the tent the flowers were dazzlingly beautiful. Shown by Messrs. S. McGredy and Son.

Lady F. Stronge.—An H.T. Rose of dwarf but free habit. The double flowers are of good shape and mid-pink colour delightfully flushed with rich Peach-pink. Shown by Messrs. S. McGredy and Son.

Lord Lambourne.—This large hybrid Pernetiana variety received an R.H.S. award on July 8 last, when the carmine flushing on the outer parts of the golden yellow petals was deeper than on the present occasion. It is a beautiful shapely Rose but too thin in texture to withstand winds or rain. The foliage is neat and of rich, green colour. Shown by Messrs. S. McGredy and Son.

Mrs. Talbot O'Farrell.—A showy hybrid Pernetiana of free habit and moderate fragrance. The flowers are shapely when in the bud state, but they become loose when mature. It is of old gold colour heavily flushed with rose on the upper surfaces. Shown by Messrs. S. McGredy and Son.

Souvenir Rose Berkeley.—A fully double H.T. Rose of fair size and vivid pink colouring. Shown by Messrs. McGredy and Son.

OTHER NOVELTIES.

In addition to the above new Roses, Messrs. S. McGredy and Son submitted *June Bond*, which they described as extra perpetual. It is a very free-flowering variety bearing well formed blooms on long, clean stems. The colour is golden yellow, heavily suffused with shell pink; *Arthur Cook*, a good H.T. which has previously received an Award of Merit, produces plenty of dark crimson, fragrant flowers. The edges of the petals are lighter in colour than the remainder, which is flushed with maroon; *Mrs. C. W. Edwards*, which also has previously received recognition, makes a bushy plant, freely furnished with smallish, deep rose-pink flowers; *Mrs. J. Heath* is a fully double, fragrant H.T. of Peach and yellow colouring. *Sir David Davis* appears to be a desirable bedding variety. It bears plenty of rather pointed flowers of dark crimson colour.

Messrs. Bees Ltd., showed *Maud E. Gladstone*, a very free-flowering dwarf Polyantha Rose of old-fashioned appearance. The flattish flowers are nearly two inches across and of soft pink colour; *Joan Howarth* appears to be a good general purpose variety somewhat suggestive of Pharisaer. The medium-sized, compact flowers are fragrant and of soft pink colour shaded with apricot in the centre of the blooms. The Rev. J. H. Pemberton submitted *Cornelia*, a hybrid Musk. It is a vigorous variety, producing large flattish sprays of open-eyed flowers about three inches across and of pink shades. Mr. J. W. Burgess brought in *Mrs. Geo. Burgess*, an interesting H.T. The foliage and flowers stems are dark purple in colour and the fragrant blooms are a light orange yellow occasionally paling at the tips. *Clovelly*, shown by Mr. Elisha J. Hicks, has already received a Certificate of Merit. It is a good, clean-grown pink H.T. somewhat of La France colouring but entirely different in shape.

Nurserymen's Classes.

The chief interest in the competitive classes was centred on the large representative groups of cut Roses. This year each exhibitor had a separate table for his display and this innovation also tended materially to prevent congestion in the tent. The general effect would have been heightened had it been possible to allow greater space between the tables.

In the premier class the first prize was won by Messrs. S. McGredy and Son with a very charming arrangement of pillar-like stands and baskets. The principal varieties were Miss Wilmott, Ethel Malcolm, Golden Emblem, The Queen Alexandra Rose, Mrs. C. Lamplough, Una Wallace, Mrs. A. R Barraclough, Mabel Morse and Admiration. The second prize was awarded to Mr. Elisha J. Hicks for a more formal display which was better on the second day when the blooms had opened more fully. Messrs. Alex. Dickson and Sons, Ltd. had a well arranged display of such varieties as Donald McDonald, Betty Uprichard, Lady Pirrie. Bright and varied displays were also made by Messrs. B. R. Cant and Sons, Messrs. Waterer, Sons and Crisp, Ltd., Mr. Henry Morse, Messrs. Bees Ltd., Messrs. G. Bunyard and Co., and the Rev. J. H. Pemberton.

There were no fewer than twelve exhibitors in the class which allowed table space measuring eight feet by six feet. The first prize was awarded to Messrs. Wm. Lowe and Son for an arrangement of corner pillars of Mrs. Henry Morse, Miss May Marriott and other varieties arching to a centre of Christine. The body of the group was made up of good vases of standard varieties. Mr. C. Gregory was awarded the second prize for masses of Lady Inchiquin, Emma Wright, Christine, Mrs. Henry Morse, The Queen Alexandra Rose and similar varieties. The other exhibitors in this class were Messrs. D. Prior and Son, Mr. Walter Easlea, Messrs. Chaplin Bros., Messrs. Frank Cant and Co., Mr. George Burch, Messrs. Wm. Paul, Ltd., Messrs. Allen Bros., Messrs. Carter Page and Co. and Mr. T. P. Edwards.

Although the competition was not so great as in the foregoing classes, the exhibits of thirty-six distinct varieties were excellent. Mr. John Mattock won the first prize with such sorts as The Queen Alexandra Rose, La Tosca, Isobel, Golden Emblem, George Dickson and Padre. Messrs. A. Warner and Son, who were second, had charming vases of Lady Pirrie, Madame Ed. Herriot, Padre and Los Angeles.

In the class for eighteen varieties of miscellaneous Roses the quality was equally high and there was little to choose between the first and second prize exhibits. Mr. Elisha J. Hicks showed Innocence, Red Star, Hawlmark Crimson, Golden Emblem and similar sorts, while Mr. George Prince showed lovely vases of Allan Chandler, Ophelia, Golden Ophelia, and Los Angeles.

Exhibition Roses.

There were only two exhibits of twenty-four distinct varieties but both were highly creditable collections. Messrs. D. Prior and Son won the first prize and included Mrs. Murray Allison, the premier bloom of the section, Sovereign, Ethel Cavell, Louise Crette, George Dickson, Betty Hutton and Mrs. C. Lamplough. In the second prize collection of Mr. C. Gregory there were very good examples of Bessie Chaplin, George Dickson, Mildred Drew and Mrs. C. Lamplough.

Mr. George Prince was first with eighteen varieties and he included clear and bright blooms of Mabel Morse, George Dickson, J. G. Glassford, Juliet, Hugh Dickson and Snow Queen. Mr. C. Longley was second.

As was only to be expected Tea Roses showed some signs of the weather, but the defects were very slight. Messrs. C. Longley and Son showing Lady Hillingdon, Maman Cochet, The Bride, Mrs. Foley Hobbs and Molly Sharman Crawford was first and Mr. George Prince was second.

Mr. Prince had the best three baskets of Roses. He showed Snow Queen, Hugh Dickson and George Dickson. The best five baskets of decorative Roses were Golden Emblem, Mrs Hy. Morse, Lieut. Chaure, Isobel and The Queen Alexandra Rose. Shown by Mr. W. Bentley. Messrs. Chaplin Bros. were second. Messrs. D. Prior and Son were first with three baskets of decorative Roses and with three of dwarf Polyantha varieties in each case; with the Polyanthas were Ideal, Else Poulsen and Kirsten Poulsen.

Mr. George Prince was awarded the first prize for twenty-four excellent vases of decorative Roses. His exhibit included Los Angeles, Betty Uprichard and Mrs. Hy. Stevens.

Amateur Classes.

The amateurs made a first-class display in all classes, and the quality was generally very good. In the leading class for twelve distinct Roses, Mr. J. N. Hart, Little Heath, Potters Bar, led with a first-rate collection and his blooms of Miss Wilmott, cream; Gladys Harkness, pink; Mrs. Charles Lamplough, cream; Admiration, apricot; and Mrs. Henry Bowles, pink, were outstandingly good. Mr. F. H. Fieldgate, Colchester, followed a close second, and Mr. G. A. Hammond, Burgess Hill, was third. There were three entries.

C. Dixon, Esq., Sheffield, was the most successful competitor in the class for twelve blooms in not fewer than nine varieties. This class was restricted to growers of fewer than one thousand plants. The winning group contained beautiful specimens of George Dickson, Miss Wilmott, Gorgeous, Marjory Bulkley, and Annie Crawford; the second and third prizes fell to Mr. W. E. Moore, High Wycombe, and Mr. J. W. Burgess, Tonbridge.

Mr. R. Pryor, Hitchin, was the sole competitor in the class for six blooms, distinct, restricted to growers of fewer than five hundred plants, and his exhibit was awarded first prize.

Mr. D. J. Cole, Treherbert, South Wales, had a grand collection which secured for him the first prize in the class for six blooms in not fewer than four varieties, restricted to growers of fewer than two-hundred-and-fifty plants. The varieties George Dickson, Mrs. H. Bowles, and Mrs. Charles Lamplough were very fine. Mrs. L. A. Tilley, Northwood, was second, and Mrs. C. E. Whitcombe, Northwood, was third. Her bloom of Candeur Lyonaise secured the Society's Silver-Gilt Medal for the best Rose exhibited by an amateur.

Mr. A. N. Rogers, East Putney; Mr. T. Owen, Alexander Road, London, N., and Mr. W. R. Cummings, Muswell Hill, were placed in the order named in the class for six distinct blooms, open only to growers residing within ten miles of Charing Cross The winning group contained excellent specimens of Coronation and Mrs. Franklin Dennison.

In the classes open only to members who, without assistance, grow and stage their own flowers, Mr W. E. Moore and Mr. D. J. Cole were the principal first prize winners, the latter showing wonderful blooms of Una Wallace, George Dickson, and Earl Haig in his collection of six blooms.

In the section devoted to Tea and Noisette Roses, Mr. W. E. Moore was the only competitor in the class for nine blooms, distinct varieties. Molly Sharman Crawford, Mrs. Herbert Stevens, and Mrs Myles Kennedy were his best flowers. For six Roses in not fewer than four varieties, Mr. F. H. Fieldgate, Colchester, the only competitor, was awarded the first prize.

The class for a basket of Cut Roses, one or more varieties, not more than twenty-four stems, attracted eight competitors, and the first prize was awarded to Mr. J. N. Hart, closely followed by Mr. C. Dixon and Mr. G. A. Hammond, while in a similar class for not more than twelve stems, restricted to members who grow their Roses without outside assistance, their was an equally strong field, Mr. R. Pryor securing the first prize; Mr. W. E. Moore and Mr. V. E. Cribb, Northwood, were second and third respectively. In another class for a basket of Roses, twelve stems of each, Mr. S. E. Tattershall, Orpington, Mr. W. E. Moore and Mr. D. J. Cole, were placed in the order mentioned.

Mr. H. R. Darlington, Potters Bar, showed the best six vases of Roses, seven stems of each, and Moonlight, Golden Emblem and Padré were very fine. The second prize-winner was Mr. J. N. Hart, and the third, Mr. G. A. Hammond. In a similar class, restricted to members employing no assistance in growing or staging their Roses, Mr. J. E. Rayer, Worcester, was first with outstanding vases of Mrs. Wemys Quinn, Vanity and Moonlight; Mrs. L. A. Tilley and Mr. V. E. Cribb were second and third respectively. There were six entries in this class.

Artistic Classes.

This section retained all its wonted popularity and the many exhibits made an attractive and valuable display. The dinner table classes were particularly well filled. In the open class Mrs. A. R. Bide was first with an artistic table of Madame Butterfly, with just a few sprays of Rosa sericea; Mrs. L. R. May was second. There were five prizes, yet a very attractive table of Isobel was unplaced.

In the amateurs' class Mrs. Oakley Fisher, Sudbury, was first with a table of Roselandia and sprays of purplish Rose foliage. Mrs. Courtney Page, who used Emma Wright very effectively, was second.

Mr. E. J. Hicks showed the best bowl of Roses in the open class, while in the amateurs' section the chief honour fell to Miss E. Griffiths, Finchley. Mrs. Courtney Page was second and also won first prizes for a vase and a bowl of Roses.

BERMONDSEY MUNICIPAL FLOWER SHOW.

On September 5 and 6 the Fourth Annual Exhibition, held under the auspices of the Bermondsey Borough Council's Beautification Committee, was a great success and far better than any previously held. Local competition was exceedingly keen, and the Judges, Messrs. H. J. Jones, of Lewisham, and G. Cousins, Botanic Gardens, Regents Park, expressed great surprise that such excellent exhibits of vegetables, flowers and plants could be grown in such a congested area. Excellent trade exhibits were also staged, and the following awards were given:—Gold Medals to Messrs. Toogood, Southampton, for a magnificent group of Gladioli, vegetables, etc.; Messrs. D. Prior and Son, Colchester, for Roses, and to the Bermondsey Borough Council Gardens Superintendent, Mr. W. H. Johns, for a decorative group of plants and flowers occupying a space of twenty by fifteen feet.

Messrs. Bees, Ltd., Liverpool, also staged an exhibit of Roses and other herbaceous flowers, and Mr. H. J. Jones, Lewisham, sent Delphiniums, Hollyhocks and Phloxes. Both groups were awarded Gold Medals.

ANTWERP INTERNATIONAL EXHIBITION.

The horticultural exhibition held at Antwerp from September 13 to 21 was scarcely so extensive as we had anticipated, nevertheless it provided a capital display of fine horticultural produce. The show was held in the Salle des Fêtes Communale and filled the main hall and corridors, the grounds outside, and a large tent, the latter containing wonderful vegetables exhibited in co-operative fashion by growers in various districts of Belgium.

The opening day was a delightfully sunny one, indeed the early morning broke clear and bright as we greeted it from the deck of s.s. Antwerp about 6.30 a.m. after the vessel had been severely wind swept and water washed during the night. Antwerp is a grand old city renowned alike for commerce and art, and its wide boulevards and avenues are the envy of many cities and many countries. The plantations and open spaces, many of considerable extent, and beautifully and brightly planted, are under the charge of M. R van Rysselberghe, who acted as chief secretary of the horticultural exhibition. The president was M. Emile Draps, of Merxem, a nurseryman of repute beyond the confines of Antwerp, and now the largest grower of Carnations in Belgium.

The committee was composed of the leading nurserymen in Antwerp and district, but the function was under the high patronage of the King and Queen of the Belgians, while the Comite d' Honneur included horticulturists from Belgium, France, Great Britain and Holland. A large and influential international jury was invited to act as judges; France and Holland were very well represented and so, of course, was Belgium, from outside Antwerp, for the judges were drawn from beyond the precincts of the city. Four Britishers accepted invitations to judge, but two only, Mr. G. T. Dickson of Newtownards, and Mr. Charles H. Curtis of *The Gardeners' Chronicle,* answered the roll call at 11 a.m. on September 13. Mme. de Vilmorin was one of the representatives from France, while M. J. Lucien de Cock, M. Chas. Pynaert, M. H. van Orshoven, M. Gentil, M. A. de Smet, and M. Emile Praet were among the leading Belgian representatives, with M. E. Krelage, M. J. Mensing, and M. W. Topsvoort, from Holland. The business of judging was concluded by about 1 o'clock, and the official opening was at 3 p.m.

Dahlias and Roses figure largely at this exhibition, but there were fine displays of Carnations, Orchids, toliage plants—especially Rex Begonias—floral designs, Begonias, Primula obconica, Conifers, Pelargoniums, annuals, vegetables and fruits. Apart from the Dahlias the most important feature of the show was provided by the vegetables. These were wonderful, and if the arrangement was not quite of the style which finds favour in Britain, nevertheless it was effective and the produce was excellent. M. de Meyer, who is State Councillor for the Malines district and holds his position under the horticultural department of the Ministry of Agriculture—of which M. van Orshoven is the head—is to be congratulated upon the splendid produce grown by the market farmers and small holders in the district for which he is responsible. He should be a proud man for everyone congratulated him—including his chief—upon the quality and disposition of the vegetables grown around Malines.

The opening ceremony was carried out with the usual formalities and excitement which attend such functions on the Continent. Music was provided and the attendance on the first and second days was very good. There was the inevitable banquet during the evening of the opening day and this was held at the Hotel de Londres, near the Central Railway Station, under the Presidency of M. Draps, who had Mme. de Vilmorin on his right hand and M. F. van Cauwelaert, the Burgomaster of Antwerp, on his left. Speeches were neither so numerous nor so lengthy as those experienced on some similar occasions in other years. The foreign guests were heartily welcomed and Mme. Vilmorin, M. E. Krelage and Mr. C. H. Curtis responded on their behalf. On the following day the members of the jury were taken in motor cars to several of the leading nurseries in Antwerp and finally to one of the big nurseries belonging to the City of Antwerp, where all the material is grown for street planting, for gardens, and for the decoration of the public buildings.

It is worthy of note that only one British firm took an exhibit to Antwerp—Messrs. Stuart, Low and Co., of Enfield and Jarvisbrook—and every plant they took over (all Orchids) was sold the day before the show, so that on the opening day they had nothing left to display on their own behalf!

Carnations and Chrysanthemums.

One of the finest exhibits in the show consisted of thirty-eight large baskets filled with well-grown Carnations. Only one variety was used in each basket. The general arrangement was excellent, the baskets being raised well above the ground-work of small Palms and Ferns. This fine display was disposed in front of the orchestra, and the leading varieties of Carnations exhibited were Benora, White Enchantress, Enchantress Supreme, Saffron, Wivelsfield Apricot, Carola, Nigger, and Raphael. M. Drap's contribution was considered to be of such excellence that it was awarded a special Cup and Gold Medal.

At the back of the stage, behind M. Drap's exhibit of Carnations, M. Draps Dom of Laeken arranged a very fine collection of large Palms, tree Ferns, Nephrolepis, Pteris and Phlebodiums, all splendidly grown, these, with two flanking groups of small Kentias from other firms formed a pleasing and imposing feature as seen from the entrance to the main hall. On the floor were groups of cut Roses arranged to form a kind of Rose garden; behind these and higher, came the Carnations from Merxem and beyond and above the Carnations came the Palms and big Ferns, so that the whole display, with big flanking groups of Dahlias created a most interesting and pleasing floral scene, but one which had been carefully designed beforehand—it was no lucky, haphazard result. M. Draps Dom was awarded the Burgomaster's prize.

About a hundred large specimen blooms of Gustave Henry Chrysanthemum, arranged by M. P. Moenens proved a great attraction; a few big blooms of W. Rigby were also included in the group.

Dahlias.

M. F. Nagels was the most extensive exhibitor of Dahlias, and his magnificent group was one of the great features of the show. His blooms, of fine quality, were arranged in big baskets and vases, and set up over a groundwork of green moss. We have seldom seen so fine an exhibit, and we do not remember to have seen Dahlias so artistically displayed at any previous show we have attended. M. Nagels specialises in Dahlias, particularly those of decorative character, suitable for marketing as cut flowers, for the Dahlia promises to become as popular in the cut flower trade in Belgium as it is in Holland. M. Nagels had the best new Dahlia, a big decorative sort, of fawn pink colour and named Nagel's Roem (Nagel's Glory); other outstanding varieties were Polar Bear, a pure white, long-stemmed decorative variety of excellent form; Viel Anvers, salmon-pink, with purplish reverse to the central florets, of fine form and colour, but would need to be used carefully in decorations; Mme. Elise Peeters, pale lilac mauve and very pretty; Aug. Peltzer, a cactus variety of true circular outline, pale maize yellow centre, and rosy mauve on the outer halves of the florets; and Gustave Clement, deep crimson scarlet, a big decorative flower of fine form and handsome appearance. All these varieties have long stiff stems.

M. W. Topsvoort, Aalsmeer, contributed a display of excellent Dahlias and included in his exhibit fine baskets of Therésia, white: Aalsmeer, soft yellow; and Maria Houlman, light orange, all good decorative sorts. M. P. Majoor, Baarn, and M. Kroon, of the same town, were both extensive exhibitors of Dahlias.

A notable exhibit in this section was one contributed by M. P. Kendrickx of Evergem. This exhibitor is a working man who makes a hobby of Dahlia culture, and that he grows Dahlias large and well was obvious, for his exhibit was a particularly good one and occupied a space about 30 feet by 8 feet in an annexe The arrangement was just a trifle crowded, but the flowers were beautifully fresh and clean and included such varieties as Protest, John K. Smith, Artis, Menny Carlée, Murillo, etc. A special prize was awarded.

Orchids.

M. Firmin Lambeau, Brussels, a well-known amateur Orchid grower, exhibited a handsome group of finely-grown plants, which contained splendid examples of Cattleya Enid, C. Hardyana alba, C. Peetersii, C. amabilis alba (numerous specimens), and Brasso-Cattleya Maroniae. This handsome group was awarded a special Objet d'Art. M. and Mme. Albert Krelinger, Chateau den Brandt, Antwerp, were also large exhibitors of Orchids, and their gardener, M. Bonroy, associated them with Ferns, Palms, and splendidly-grown Streptocarpus; Cattleya Hardyana in variety, C. speciosissima, with a few Cypripediums and Odontoglossums were conspicuous among the Orchids.

M. J. Janssens, St. Marienburg, had a fine exhibit with the plants very pleasingly arranged. Here were capital examples of Brasso-Laelio-Cattleya Saundersii, Sophro-Laelio-Cattleya Mme. Jeannie, of rich ruby colour, Sophro-Cattleya Blackii, Odontioda Devossiana, O. Joan, O. Charlesworthii, Brasso-Cattleya Maronae, Brasso-Cattleya Andre Maron, Cattleya Hardyana alba, Laelio-Cattleya Soulange, and Laelio-Cattleya George Woodhams, with Oncidium incurvum in the background. The Krelinger Cup was awarded to this attractive exhibit.

M. G. Lanthoine, Brussels, showed a fine lot of Cattleya Hardyana alba and M. G. de Doncker, Assche, contributed very fine examples of Vanda coerulea and Oncidiums, while M. René Behiels, St. Nicholaas, exhibited Cattleya Hardyana alba, C. Fabia, and C. Enid in fine condition. Cypripedium Maudiae was shown in quantity and in good form by MM. A. and G. Janssens, Merxem; this firm grows this Orchid extensively for the cut flower trade.

M. L. Hoornaert, St. Nicholaas, presented Vanda coerulea in particularly fine form and staged a large group of plants, each carrying one or more big spikes of splendid blue flowers; Dendrobium formosum giganteum, also shown in this group was scarcely so fine as we have it at home. Oncidiums and Odontoglossums completed this effective and interesting exhibit.

Miscellaneous.

It was a great pleasure to inspect the fine collection of Rex Begonias arranged under the portico, in two groups, one on each side of the entrance doors. The exhibitor was M. J. Janssens, St. Marienburg; the plants were grand specimens, quite large examples and we regret the varieties were not labelled.

The best new Rose was the one named John C. Mensing; this is a sport from Ophelia and is clear sparkling pink with salmon-yellow base to the petals; it is very beautiful in the half-opened state. Rose Pink Pearl, shown by M. Leenders and Co., Limburg, is pretty when half-opened but not of good form when expanded; the colour is deep rose-pink, but its fine fragrance should make it popular.

Nina Van de Velde is the name of a small-flowered but pretty salmon-pink rose, with very dark bronzy-green foliage; it is Polyantha × Pernetiana hybrid and appears to be very free-flowering. It was exhibited by M. Van de Velde of Vieux Dieu.

A large group of cut blooms af Antirrhinums shown by M. J. Beroklaar, included many of the varieties popular at home. Floral designs were delightfully displayed by M. Aertsens, whose vases of Lilium auratum Vallota purpurea and Gerberas were beautiful.

Outdoor Exhibits.

Immediately in front of the entrance to the hall M. Rysselberghe had filled a huge bed with Asters, all grown in small pots, and each plant carrying one big bloom. The colours were well arranged, and as the pots were plunged in the light soil the whole appeared to have been planted for several weeks instead of only few hours. Various exhibitors filled surrounding beds with Begonias, early Chrysanthemums, and Pelargoniums, and beyond these were borders of Heliotrope, Dahlias and Chrysanthemums, so readers will understand that the scene viewed from the entrance steps was a brilliant one, with fragrance everywhere.

The Roses in the grounds were quite good and carried an abundance of flowers; so far as we could gather, however, there was nothing new or outstanding in this section. M. Van Ockel made a wonderful splash of colour with a dwarf and unusually brilliant form of Salvia splendens, while M. Jules Demaynch filled a large bed with Begonias, chiefly single varieties, representing a good strain for bedding.

Some handsome Cordylines were on view and it is always a cause for wonder how these plants are kept in such fine condition in such small tubs. M. Debaerdemaeker, Evergem, contributed some grand examples of C. Veitchii superba, C. lentiginosa and C. Doucettii var. Alberti.

Trees and Shrubs.

Conifers were quite well shown in large groups in the grounds by the Horticultural Society of Calmpthout; here were beautiful specimens of Sciadopitys verticillata, Retinospora pisifera gracilis, of pendant habit; columnar Junipers, Picea excelsa Maxwellii, of dense habit and deep green colour, Golden Cypress and Retinosporas, Golden Yews, and the variegated form of Thuia dolobrata. This group and also the one arranged by M. M. Op. de Beck & Sons, Putte, near Malines, were well planted and interesting. The last named exhibitor showed several "blue" Conifers. including Abies Parryana glauca, A. Kosteriana Moerheimii—we give the continental names—Abies Veitchiana, the spreading Taxus rependens, and Abies excelsa pumila var. pygmaea, of very dwarf, dense habit.

Pinus Banksiana, Abies Doumettii nigra, Juniperus hibernica, Abies nobilis glauca, and A. cephalodes were among the best examples in a big group contributed by M. L. Lens, of Mechelin, while quite large examples of Cedrus atlantica glauca, Cupressus Lawsoniana lutescens, Juniperus virginiana argentea, Abies Kosteriana glauca and A. K. pendula—very distinct and graceful—were placed in another large bed by the same exhibitor; here however the display was rather scanty and would have been greatly improved had more small Conifers been arranged among the larger specimens.

Gardens.

MM. W. Juchem and Son, of Vieux Dieu, arranged a Japanese Garden out-of-doors, but it did not attract us greatly, as we disliked the blue-coloured water of the little lakelet. Possibly there have been so few blue skies in Antwerp (as elsewhere) of late that the designers used the art of the dyer to provide the "reflection" denied by nature. The gateway planting appealed most to us, for here were red Japanese Maples, Hollies, Cotoneasters, early Chrysanthemums, Lilium speciosum, dwarf Conifers, and Viburnum rhytidophyllum grouped pleasingly in association with a few grey stones. A tea house, Japanese stone lanterns, and quaint tea tables formed part of this garden. The same firm contributed a rock and water garden, but while dwarf Conifers, various Cotoneasters, Berberis, and Bamboos were in keeping with the several portions of the exhibit, we considered the use of Cannas, scarlet Pelargoniums, semperflorens, Begonias, and Cineraria maritima quite unnecessary.

One of the largest outdoor displays was a terraced garden designed and planted by M. J. Goris, Edegem. The lowest retaining wall was pleasingly planted with Violas, Vincas, Saxifragas and Campanulas and the little border below was gay with Sedum spectabile, and, lower still, half-a-dozen beds of Pelargoniums were set in a grass lawn. The middle terrace contained a central Lily pool and clipped trees. Choice Conifers were used as a background along the uppermost terrace.

What might be called an old English garden was planted by M. E. Cools, of Antwerp. This was circular, partly sunk, as compared with the surroundings, and enclosed in a trimly clipped Privet hedge, with little hedged shelters on opposite sides, flag-paved and just the spots for afternoon tea in fine weather. The centre feature was an old well head; herbaceous plants filled the narrow borders within the hedge, while low, tree Ivies marked other corners where paths intersected the lawns. Four beds of Pelargoniums completed a pleasing design.

Vegetables and Fruits.

The section devoted to fruits and vegetables was an extensive one, and as already stated, was accommodated in a tent and an annexe.

Messrs. Vilmorin-Andrieux et Cie, of Paris, occupied a central position with a wonderful display of fruits and vegetables, and although the arrangement was of a more formal character than we are accustomed to at home it was none the less very fine in effect and extremely interesting. This great firm showed Tomatos as growing, and a wide range of Cabbages, some of the latter being tall, more like Cos Lettuce in shape, and of large size. We were surprised to see so many varieties of Kale. Cucumbers were very effective, green, yellow and white varieties figuring in large numbers. Onions were represented in great variety of form and colour, while Radishes were almost equally varied and included the large Paris varieties useful for winter salads and rarely grown in England. The display of Endives and Chicory indicated the popularity of these salads, while Gourds of decorative character, some like scarlet footballs—Custard Marrows, with golden centres which looked fit to eat raw, and Cantaloupe Melons were included, with Carrots in great variety, Artichokes, herbs of many kinds, purple and white Aubergines, Seakale and Spinach Beet and Cauliflowers combined to make up an extraordinarily varied exhibit which thoroughly merited the award of the handsome cup offered by the City of Antwerp.

The Malines growers combined to make a most attractive display of Cauliflowers, red and green Cabbages, Capsicums, Carrots and other vegetables, all remarkably well grown and reflecting great credit upon M. de Meyer who is the horticultural expert for this district.

M. de Meyer is not solely an advisor, he has a big garden of his own, some four or five acres in extent, so that he can personally test the fruits and vegetables he advises others to grow, and what is more to the purpose, he grows his crops amazingly well and thus sets a high standard for the Malines growers to aim at. From his own garden he showed a superb lot of Emperor Alexander Apples, as well as splendid specimens of Transparent de Croncelles Apples and Durondeau Pears. Several market salesmen and some growers also exhibited fruits and these included a great variety of Pears and capital Grapes. Double Phillip Pear, by the way, appears to be a good cropping variety, of handsome appearance and good for marketing, but (and we speak from personal experience) not of high class flavour

Obituary.

John Bates.—A well-known and much-respected person in the horticultural world has been removed by the death, which occurred on the 4th inst., after a painful illness, of Mr. John Bates, head gardener to Lt.-Col. W. S. W. Parker Jervis, D.S.O., of Meaford, near Stone (Staffs.). The deceased, who was sixty-six years of age, resided at Meaford Lodge, and had been in the same employ for about twenty years. In 1885 he was head gardener to the late J. T. Harris, Esq., The Hayes, Stone, and whilst there won many prizes for fruit, vegetables and flowers at the leading shows, including Shrewsbury, Birmingham, Wolverhampton, Welshpool, Derby and Hanley. His valued services as judge were frequently requisitioned at shows in the district and he was a well-informed contributor of articles to gardening papers. His forte was Grape culture. The deceased leaves a widow and two children. The funeral took place on Saturday last at St. John's Church, Oulton, and was conducted by the Vicar (Rev. T. L. Palmer) and the Rev. C. E. Cope (Vicar of Christ Church, Stone). The floral tributes included a "Token of affection and esteem and in remembrance of nearly twenty years as head gardener, from the family at Meaford Hall."

ANSWERS TO CORRESPONDENTS.

Grapes: *Correspondent.* The bunch of Grapes arrived in a badly shrivelled condition. They appear to be very badly attacked by Mildew and nothing can save the crop this season if the other bunches are in the same condition. Another probable cause of the rusty appearance is a sudden rise in the temperature in the early morning before the ventilators are opened to allow the condensed moisture to escape. Give the vines plenty of water at the roots during the growing season, and guard against an excess of atmospheric moisture in the house when fire heat is not used. Wash the vines with soft soap and sulphur or Gishurst Compound according to the maker's directions, during the dormant season. With careful management your Grapes should be satisfactory next season. See also *Gard. Chron.*, May 17 and June 7, 1924.

Lettuce Little Gott: *B. P. D.* We believe it is possible to obtain seed of this variety from any of the leading seedsmen who make a speciality in vegetables.

Nectarines Shrivelling: *J. R.* The external symptoms of shrivelling in the fruits submitted provide no clue as to the cause of the trouble. Special cultures made from the interior of the fruits show the presence of Botrytis species, but this is not likely to be the primary cause of the trouble. It is possible that the fruits may have suffered damage as the result of the action of bright sunlight upon them when they were covered in moisture during their younger stages of development. The dark areas on the epidermis of the twigs appear to be superficial and no fungus could be found in them. We are continuing the investigation and will report again if there are any further developments.

Scab Fungus on Apple Twigs: *G. W. S.* The scorched appearance of the leaves is due entirely to the presence of the scab fungus, Venturia inaequalis, which has killed the underlying parts of the leaf. It is probable that the disease has been present in your garden for some time and the unfavourable summer may have caused it to have become more pronounced.

Communications Received.—A. G.—H. S.—F. K.—A. B.

THE
Gardeners' Chronicle
No. 1970—SATURDAY, SEPT. 27, 1924.

CONTENTS.

Alpine Garden—
  Geranium sanguineum 212
  Iris tectorum 212
Annuals for greenhouse and conservatory ... 212
Bastin, Mr. W. L. ... 208
Books, notices of—
  Manual of cultivated plants 213
Bulb Garden—
  Lily season in Scotland, the 217
Canada, importation of plants into 207
Dahlem Botanic Garden 208
Flower Show, an amateurs' 208
Flower show, a charity 208
Freesias 218
Fruit crops, remarks on the condition of the 213
"Gardeners' Chronicle" seventy-five years ago 209
Haarlem, international spring flower show at 207
Hardy Flower Border—
  Scabiosa Columbaria rosea 215
  Urospermum Dalechampii 215
Holland Park Hall, exhibition at 219
Imperial Botanical Conference 213
Lilium giganteum ... 218
Orchid notes and gleanings—
  Cattleya Fabia ... 212
  Cattleya John Henry 212
  Cattleya Sunstar ... 212
Orchids, new hybrid ... 212
Plants new or noteworthy—
  Elaeocarpus lucidus 209
Royal Gardeners' Benevolent Institution ... 208
Salvia splendens, a white 208
Scholarships, agricultural 207
Societies—
  Hove Horticultural... 225
  Reading and District Gardeners' Mutual 225
  Royal Caledonian ... 224
  Royal Horticultural 219
  Royal Scottish Arboricultural 224
  United Horticultural Benefit and Provident 225
Trees and Shrubs—
  Clethra alnifolia ... 211
  Perovskia atriplicifolia 211
Vegetable Garden—
  Potatos for exhibition and general utility 217
Viburnum rhytidophyllum fruiting 218
Ward's, Mr. F. Kingdon, eighth expedition in Asia 214
Week's Work, the ... 210
Welbeck Abbey ... 216

ILLUSTRATIONS.

Bastin, Mr. W. L., portrait of 208
Elaeocarpus lucidus 209
Lhasa Road, a valley on the 214
Rose Norman Lambert 211
Tsangpo, crossing the 215
Welbeck Abbey: Rose garden, 216; Sunk garden, a border in the, 217; Sunk garden, the 218

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 53·1.

Actual Temperature:—

Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 24, 10 a.m.: Bar. 29·8: temp. 55°. Weather, Fine.

A Wonderful Garden Year. In a year when everybody's holidays have been spoiled by bad weather, and the sun has seemed permanently banished from the heavens, it would seem no less rash than indecorous to testify on behalf of 1924. Yet—and we speak with the sedate reserve proper to the no longer young—the present year has been from the gardener's point of view the most memorable of any during the past decade and more. The garden year began late—fully three weeks behind time in the centre of England—and it followed on a winter which, by its intermittent severity might have been expected to wreck many garden hopes. In spite, however, of its rigors, the winds were not very great, and perhaps because of this, the survivors, when at last they began to grow, flourished exceedingly. It may be that bulbous plants were less bright than usual, but if so, that is to be ascribed, not to 1924 but to its predecessor. Early-flowering trees—Pyruses and Prunuses — were more beautiful than in most years, and the top fruits blossomed wonderfully well. The former are now lovely once again with their fruits; and of the orchard fruits, Pears, at least, were a full crop. Apples, though light, are, so far as gardeners are concerned, by no means poor, and the fruit is of good flavour. Some varieties, such as Upton Pyne, a regular biennial bearer, William Crump, and Cox's Orange Pippin, appear to be cropping more heavily than usual, though other trusty varieties are bearing but light crops. However individual experiences may differ with respect to top fruit—and it may be confessed in passing that only here and there in gardens have Plums done well—there can, we think, be no two opinions as to the all-round excellence of small fruit. Strawberries reflected the sunless weather in lack of flavour, but not in quantity of fruit; and other small fruits, Currants, Gooseberries, and Raspberries produced more berries than in any recent year. Never has the Rose garden been more beautiful; and although the second blooming could not rival the first, it was and remains good. The observant gardener will have noted that the dreaded Black-spot fungus seems, no less than the Roses, to be enjoying the weather which humans deplore, and there are ominous signs that its ravages will appear in next year's plants. Is there any border plant which has not been at its best? The Asters, which never mind weather, are as fine as they can be, and Heleniums, Kniphofias, Dahlias and all the autumn things are not only profusely in flower, but, in despite of sunless days and high winds, are lasting long and well. The Cotoneasters, C. horizontalis, C. Henryi, and C. acuminata in particular, are full of berries, and the many Berberis species and hybrids, though a little late, promise a no less vivid display of fruit. Hybrid Trollius, planted in a place too dry for them, have surpassed expectations. The plants in wetter ground flowered once and were over, but those kept by chance on the dry side have given a second blooming of their yellow and orange flowers, rivalling in colour if not in size the blooms of the African Marigolds. Hybrid Primulinus Gladiolus—a garden race of highest value, perfect in the soft, varied, and often bright tones of their flowers—have surpassed themselves, and the charming Polygonum Aubertii, a slenderer, less opulent P. baldschuanicum, which has been flowering since August, bids fair to continue to produce its delicate white trusses of flowers till the frost cuts them back. Who will attempt to explain the fact—if fact it be, and at all events from our experience it is—that this year of dull and lowering skies should have proved to be such a wonderful garden year? Even Potatos, which the pessimists would say must all be blighted, have, at all events in the gardens we have seen, dug up clean and plentiful. What they will do in the clamp cannot be predicted, but at present they show but little sign of disease. We may not be able to account for it, but the floriferousness and fruitfulness of the garden in such a year as this must gladden the hearts of all true gardeners. It must fill them with satisfaction also, for the brightness of the summer and autumn borders reflects a sunshine which not they, but flowers only, have been able to perceive. The unexpected beauty of the garden in this dull year more than justifies all the time and trouble spent in growing plants; it shows how wise we all are in becoming and remaining gardeners.

Rothamsted Experimental Station.—The Lawes Agricultural Trust announces that during the forthcoming winter Mr. H. V. Garner, the guide-demonstrator of the Rothamsted Experimental Station, Harpenden, will be able to give a few lectures to agricultural and horticultural societies and clubs, etc., on the Rothamsted experiments in regard to the manuring of root crops and Potatos, cereals, grassland, rotation, farm management and chalking and liming. For students' societies and similar bodies, lectures could be arranged, dealing with the field work at Rothamsted, investigations in the Rothamsted laboratories, and the carrying out of agricultural experiments. No fee will be charged for Mr. Garner's services, but any association engaging him would be expected to defray his travelling expenses, and to make such arrangements for the lecture as may be necessary. All communications should be addressed to the Secretary, Rothamsted Experimental Station, Harpenden.

Agricultural Scholarships.—The Ministry of Agriculture and Fisheries and the Board of Agriculture for Scotland invite applications for a limited number of agricultural scholarships, which are open to students who propose to take up posts as agricultural organizers, teachers or lecturers in agriculture, etc. Candidates should be graduates of a University, but exceptional candidates otherwise qualified, who have not had an opportunity of graduating, will be regarded as eligible. Scholarships are tenable for a period of two years, and are intended to give students an opportunity of broadening their knowledge of agriculture both at home and abroad. The value of the scholarships will vary according to the scholars' means, and to the cost of living prevailing in the country visited, but in no case will the value of a scholarship exceed £200 per annum. In addition, laboratory fees and travelling expenses incurred for the purposes of the scholarship will be defrayed. Forms of application and all other particulars may be obtained from the Secretary, Ministry of Agriculture and Fisheries, 10, Whitehall Place, London, S.W. 1, in the case of English and Welsh students, and from the Secretary, Board of Agriculture for Scotland, York Buildings, Queen Street, Edinburgh, in the case of Scottish students. The latest date for receiving applications is October 31st, 1924.

Importation of Plants into Canada.—The Ministry of Agriculture and Fisheries desires to inform exporters of plants that the Canadian Authorities have now modified their recent Order, prohibiting the importation of merchandise packed in hay, straw, or other fodder. These materials may be used provided that the merchandise is accompanied by a certificate from a properly qualified veterinary officer to the effect (a) that the hay, straw or fodder has been grown and stored in a district not infected with foot and mouth disease; or (b) that the hay, straw or fodder has been thoroughly disinfected. In the absence of such certificates the merchandise will be unpacked and the packing destroyed at the expense of the shipper. Exporters of nursery stock will, however, be well advised to abandon the use of hay and straw in favour of other forms of packing material for any consignments to be sent to Canada.

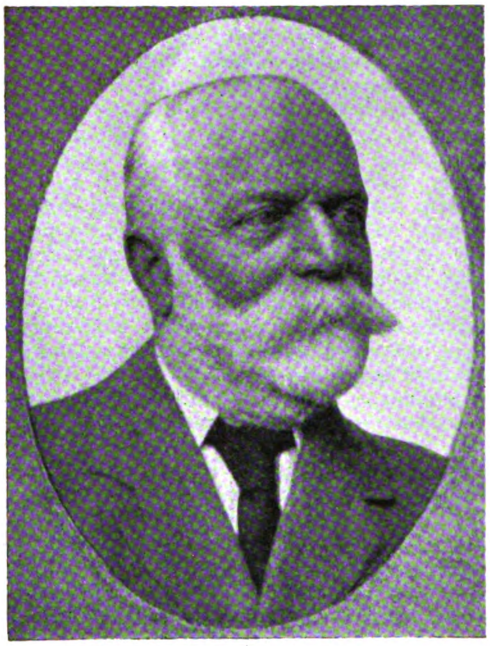
International Spring Flower Show at Haarlem, 1925.—On July 1 the site for the great International Show at Haarlem (Heemstede) in 1925 was placed at the disposal of the organising Committee. An office building, especially designed and executed for the purpose, was ready for use on the same day. The elaborate ground work has been completed and planting of the bulbs commenced early in the present month. The exhibits for the open air display are so numerous that the grounds will be entirely occupied by them. The great hall for the indoor exhibitions will be completed in January next. In front of this building a French garden is being laid out, in which enormous masses of Crocuses, Hyacinths, early and late Tulips will flower in succession. In the surrounding grounds there will be a large garden in old Dutch style, containing a selection of the best and newest varieties of bulbs, planted by the members of the Dutch Bulb Exporters' Association. Almost all the local branches of the Dutch Bulb Growers'

Society are sending collective exhibits of their members, all forming very important groups, which will allow a comparison of the bulbs grown in various parts of the bulb district. All the known varieties of Narcissi will be shown in the gardens, planted by the Society of Daffodil Growers. Aalsmeer, Boskoop and Naarden will show their best products for spring gardening. Numerous rock gardens and formal gardens will be exhibited, and several fruit gardens have also been promised. The picturesque character of the grounds affords an unique opportunity for landscape architects to produce artistic and aesthetic effects. The exhibition will be open from March 13 until May 21, and excursions from various countries are already in preparation. It is expected that a special steamer will sail from America for tourists to the Haarlem flower show and bulb fields next year, and of course numerous Easter trips will be organised from England, as the flowering period of the Hyacinths will probably coincide with Easter time.

Mr. H. V. Taylor's American Tour.—Mr. H. V. Taylor, Deputy Controller of Horticulture, recently left England for a tour in America and Canada on behalf of the Ministry of Agriculture in order to study the work of the central fruit-packing stations which are in existence in the countries named. The Ministry of Agriculture, as is well known, has endeavoured to improve the standards of packing and marketing of British fruits, and doubtless much information will accrue from Mr. Taylor's visit to America and Canada where, we believe, many of the growers send their fruit to the central station of the district, where it is graded, packed, and certified so that it becomes immediately acceptable to the market and to the consumer.

Dahlem (Berlin) Botanic Garden and Museum.—We have just received the latest *Bulletin*, published in June this year, on the work of the Botanic Garden and Museum at Dahlem, near Berlin, one of the best known centres of horticultural and botanical work in Germany. The volume covers the work done between April, 1923 and March, 1924, and contains, among other things, contributions to the Flora of Kenya; a new section of the genus, Amorphallus, Bl.; an article on Violaceae; and a very interesting contribution on the genus Englerastrum, with some excellent illustrations. The library, is maintained as well as it can be by means of exchange and gifts, but financial stringency renders it impossible to make extensive purchases. Herr Schuster, the librarian, is doing his best under the circumstances to improve the collections of books and periodicals.

The Gardeners' Royal Benevolent Institution.—The report of the Committee and statement of accounts for the year 1923 of the Gardeners' Royal Benevolent Institution, has recently been issued, and the publication also contains the names and addresses of the annual subscribers, donors and life members, as well as a list of the annuitants of the Institution. It is with regret we note that one of the successful and one of the unsuccessful candidates at this years' election have since died. The seventy-ninth Annual Festival, at which H.R.H. the Prince of Wales, K.G., has graciously promised to attend, will be held in aid of the Fund on November 25th, and a Special Festival Fund to commemorate the Presidency of His Royal Highness has been opened. A warm friend of the Institution has kindly offered £1,050 if £9,450 is raised, and a second £1,050 if the fund should reach the sum of £18,900 or proportionate gifts for intermediate amounts. The Committee is anxious to take as full advantage as possible of this generous offer towards which it has already received handsome donations and promises of support. It is earnestly hoped that the amount appealed for will be subscribed as the work of this Institution deserves every support for all engaged in horticultural pursuits.



MR. W. L. BASTIN.

Mr. W. L. Bastin.—For over twenty-seven years Mr. W. L. Bastin has been gardener to Lord Faringdon at Buscot Park, Faringdon, Berkshire, and he has thoroughly earned the well-deserved reputation he enjoys as a particularly skilful cultivator of fruits and vegetables. Mr. Bastin's experience as a grower and exhibitor is an extensive one, and his successes on the show board commenced when he was gardener to the late Admiral Pringle, at Digswell House, Welwyn. Previously he had served in various capacities at Preston Hall, Maidstone; Swyncombe Park, Henley; Haydon Hall, Pinner, and Ashgrove, Sevenoaks. Soon after Mr. Bastin took charge of the gardens at Buscot Park, Lord Faringdon expressed a wish that produce should be exhibited, and so from 1897 until 1910 exhibiting was regarded as part of the routine of garden work. High honours were won at London, Shrewsbury, Wolverhampton, Cardiff, Bristol, Birmingham, Brighton, Oxford and Swindon, as well as at local shows. For a period of eight years Lord Faringdon exhibited at the shows held by the Royal Horticultural Society in the Temple Gardens, where Knightian, Flora and Banksian Medals were won in addition to Cups, while in 1905 a Gold Medal indicated the judges' opinion of the exhibit from Buscot Park. Lord Faringdon is extremely fond of his garden and alterations and improvements are always in progress with a view to extending the gardens and increasing their beauty and interest. There is an extensive glass department at Buscot Park, and some idea of the extent of Mr. Bastin's responsibility may be gathered from the statement that the walled-in kitchen gardens are six acres in extent.

Charity Flower Show.—The Blackburn and District Cottage Gardeners' Association holds a modest and interesting exhibition annually at Blackburn, and although the display is only of local importance the fact that the proceeds of the show are invariably handed over to the Blackburn and East Lancashire Royal Infirmary, is of interest to a wider public. The work of this local society is worthy of imitation, and we feel sure many local societies would create greater enthusiasm in horticultural matters, secure a larger measure of support, and make a profit on their shows if the organisers had "the sacred cause of charity" in view. The Blackburn Society has contributed the handsome sum of £469 to the East Lancashire Infirmary.

Prize for an all-French Motor Lawn-mower.—In order to encourage French manufactures, M. Denaiffe has offered a prize of a thousand francs, to be awarded under the auspices of the Société Nationale d'Horticulture Francaise, to the member of the Society constructing the best motor lawn-mower, of all-French make, suitable for an ordinary country house. up to the present most of the motor lawn-mowers used in France have been of foreign manufacture. Many of the machines will probably be on view at the autumn Exhibition of the Society in Paris, but the prize will not be awarded until the exhibition in May, 1925.

An Amateurs' Flower Show.—The Council of the Royal Horticultural Society has arranged to hold an Amateur Flower Show at the Royal Horticultural Hall, Vincent Square, Westminster, on Tuesday and Wednesday, June 30 and July 1, 1925. Schedules for this exhibition are now available, and copies may be had on application to the Offices of the Society. For several years past the R H.S fortnightly meetings and exhibitions have been almost monopolised by nurserymen and seedsmen, and amateurs have shown a disinclination to exhibit their products side by side with those of large extent and great excellence displayed by the traders. The exhibition now announced will provide an opportunity for amateurs to compete with each other, and Mr. H. B. May—with whom we believe the idea of such a show originated—is confident that amateur horticulturists will take full advantage of it. Forty-two classes are provided, and fairly liberal prizes are offered. Certain limitations are imposed upon those who compete in certain classes, but we venture to express the hope that many wealthy amateurs will send exhibits (not for competition) which may not come within the scope of the scheduled classes. Our contemporary, *Amateur Gardening*, has offered a Silver Cup to be awarded to the exhibitor who obtains the largest number of points at the show and we have pleasure in offering a *Gardeners' Chronicle* silver-gilt medal to be awarded to the amateur contributing the best exhibit.

George Washington as a Landscape Gardener.—An American contemporary remarks that it would appear from researches which have lately been made that George Washington, besides being a great statesman and soldier, was also a gardener of no mean calibre. He is said to have built the first greenhouse in America, and to have been responsible for the first introduction of Box trees on a large scale into that country. At the age of twenty, being then a surveyor, he drew the plans for an elaborate garden, out of which, it is said, the Mount Vernon gardens were evolved. The plans are said still to exist, and to show remarkable care for detail. The Box trees were imported from England, with much other material for the erection of the mansion and the laying out of the garden.

A White Salvia splendens.—A few years ago white forms of the scarlet Salvia splendens were offered, but as their whiteness was of very doubtful purity, they failed to attract much attention. Another attempt is to be made, however, and Messrs. Rivoire and Sons, Lyons, announce that they hope to offer seeds of a white form, which they propose to name White Pearl. Whether this new variety will attain anything like the popularity of its bright-hued relatives remains to be seen; indeed, it is possible that the opportunity of testing it may have to be deferred for a year because its distribution as a seed novelty in 1925 will depend entirely upon the success of the seed harvest this autumn.

A New Park and Recreation Ground for Brighton.—The townspeople of Brighton are to be congratulated on the acquirement of a new park and a new recreation centre which were opened recently by the Mayor of Brighton, Alderman H. Milnes Black, J.P. The park is situated in Dyke Road, and the land, which is about ten acres in extent, was purchased in 1913 at a cost of £9,400. The loan charges on the purchase amount to £390. The total amount expended on the work of laying out the ground is about £4,700, in respect of which a loan expenditure of £3,850 has been incurred, and the balance will be defrayed out of revenue. Of the area of ten acres a little over six acres is occupied by an ornamental garden, while provision has also been made for twelve grass tennis courts, a full-sized bowling green and an open space for children. The land for the new recreation ground, which is situated in Lewes Road, stands on the site of the disused Waterworks Pumping Station, and about £6,400 has been expended to date on adapting the land, a loan of £6,348, repayable in twenty years, having been sanctioned in respect of this work. Both the recreation ground and the new park have been laid out under the capable direction of Mr. B. H. Maclaren, Superintendent of the Brighton Parks and Gardens.

Appointments for the Ensuing Week.—Wednesday, October 1: Morley and District Paxton Society's meeting; Glasgow and West of Scotland Horticultural Society's meeting. Royal Agricultural Society's meeting. Thursday, October 2: Nottingham and Notts. Chrysanthemum Society's meeting. Saturday, October 4: Blackburn and District Horticultural Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Royal Horticultural of Ireland.*—We find in *Sanders' News Letter* of September 15, a report of the last meeting of this Society. We are glad to see that public opinion has wrung from its managers some consideration for the gardeners who exhibit. According to the report, the entries for competition were as follows: plants and flowers, 83; fruit, 215; vegetables, 181. The day's proceedings are stated to have ended with a row, of which the following account is given in the *Irish Farmers' Gazette*: "It is now our painful duty to take notice of the degrading and shameful finale to this splendid and highly useful and important show. We, reluctantly, were obliged to animadvert on the terminating scene of the autumnal show of 1848, which stands recorded on our pages, but the scene of Thursday evening last outbeggars description, for vulgarity, ferocity, and a total disregard to anything approaching, in the most remote degree, to decency or honesty. The whole scene was of the most brutal description. We have already stated that above two hundred entries were made in the fruit department alone; many trays of extraordinary dimensions and the whole presenting the most delicious fruits of the season—in fact, nothing was wanting that could be produced with or without the aid of glass. We are considerably under the mark in stating that the value of the fruit at this exhibition was over £100. Intimation was given that each exhibitor was at liberty to remove his fruit, at half-past five, but not sooner. Just as the period expired, a rush was made; the police made no resistance, but rather enjoyed the scene, and the whole of this fine collection of fruit went to destruction in a few minutes, along with a quantity of the plates upon which they were laid, which were trampled under foot. The attack was instantaneous, and we have not heard if any particular individual has been recognised as leading it on, but we observed some clerks from public offices, and other places, very busy in the scrimmage, or grush, as the tinkers would call it, and a noted character, who should have set a better example, wearing a white hat, cramming a very large Melon into it, and wedged it round with small fruit. This individual was not satisfied with all he could purloin in the fruit way, but filled his coat pockets, some say his unmentionables, with Parsnips, Carrots, Beet, etc. On the whole, the scene was of the most disgraceful character!" *Gard. Chron., September 29, 1849.*

PLANTS NEW OR NOTEWORTHY.

ELAEOCARPUS LUCIDUS.

Being evergreen trees of great height and of graceful appearance, many species of the large genus Elaeocarpus are considered to be among the most handsome trees in the flora of Assam. Their racemes of white flowers, with delicately fringed petals, are very effective, but in some of the species, as in E. lucidus, these are rather hidden by the density of the young shoots and leaves. E. lucidus (Fig. 75) is, however, a conspicuous tree when in flower on account of its old leaves then turning red. It is successfully grown, with six other species, in gardens in these hills up to altitudes of 5,000 and 6,000 feet, although in its natural habitat it resembles many species of the genus by not ascending beyond an altitude of 3,000 feet.

The genus Elaeocarpus and many others of our beautiful indigenous trees are very seldom seen represented in our parks and gardens or among our avenue and roadside trees, and yet their ornamental value for such purposes could scarcely be overrated, and they would certainly provide a most welcome relief to the Neem and the Tamarind which are so much in evidence in many of the Mofussil towns throughout India.

E. serratus, which produces the edible fruit known as the Indian Olives, and E. Ganitrus are the only two species to be found quoted in our Indian plant catalogues, whilst the two species best known by the natives of Assam are probably E. Ganitrus and E. lucidus; the former on account of its seeds, which are strung together and worn as necklaces with the belief that they keep away evil, and the latter on account of the medicinal properties in its leaves and bark, which is largely used and said to have a wonderful effect in the healing of cuts.

The word Elaeocarpus is derived from the Greek meaning Olive-fruit, and there are about one hundred species known in the Tropics of the Old World *L. Ruse, Mayville, Shillong, Assam.*

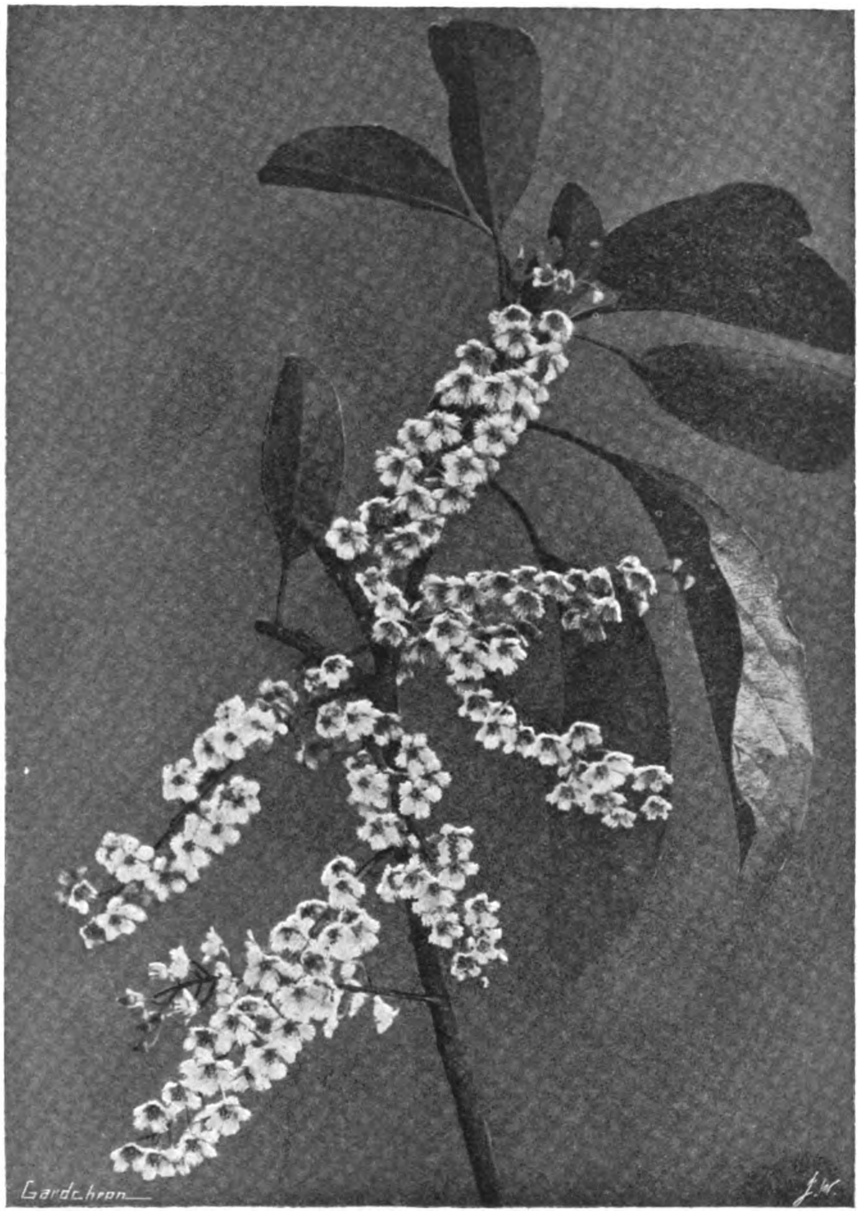


FIG. 75.—ELAEOCARPUS LUCIDUS.

Flowers white, with fringed petals; leaves red when the tree is in bloom.

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Getting Ready for Winter.—As the present month advances the days shorten and there is less sunshine, consequently every effort should be made to induce the thorough ripening of the new growths and pseudo-bulbs of Orchids before the arrival of the dark days of winter. If, in addition to the permanent blinds, extra shading has been provided by stippling the glass, this should be washed thoroughly as well as the woodwork; previous to commencing the work, stop up the pipes leading into the tanks, to prevent any dirt passing into the rain water. Some shade will still be necessary, but it is impossible to give precise directions, for so much depends on the kinds of plants contained in the separate divisions. In all cases the reduction should be gradual, the object being to cause the foliage to become hardened so that little shading will be necessary after the end of the month. The blinds should be used with discretion and the plants exposed to all the light possible without causing the leaves to become scorched by the sun. The amount of moisture in the atmosphere must be regulated with extra care until fire heat is more regularly employed. The cooler houses will require damping the least, as there will be less evaporation in these structures. In the warmer houses sufficient moisture must be promoted to counteract the effects of fire-heat, as a little extra warmth will be needed as the nights become colder. On warm days the ventilators should be opened slightly, but as much sun-heat should be retained in the warmest houses as practicable. The cool, damp, summer has suited Odontoglossums and the majority of the plants are developing vigorous growth. The ventilation of the house in which they are growing should be done very carefully at this season; admit air through the bottom ventilators at all times and regulate the amount in accordance with the outside temperature. During warm nights the top ventilators may be opened slightly to admit the autumn dews which are very beneficial to Odontoglossums, especially those that have been recently potted.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Anchusa. — Large, old clumps of these handsome border plants become unmanageable if left too long, and young stock should be raised for replacements where necessary. This is best effected by means of root-cuttings, which should be made from pieces of sound, healthy roots and inserted in sandy soil. Place them in a cold frame, and in due course growing points will form and make good plants for transferring to their flowering quarters in the spring.

Sweet Peas.—Where outside autumn-sowings of Sweet Peas are practised, the end of September or early October is a suitable time to sow. Only the lighter soils are suitable for this method of cultivation, and an open position should be chosen where the plants can make sturdy growth.

Paeonies.—Herbaceous Paeonies which need transplanting should be moved at once in order to have the plants well established before winter. New roots form quickly at this season, and plants moved during the winter and spring take much longer to become established than those moved in early autumn. Paeonies are gross feeders, and usually occupy the ground for a number of years, hence in preparing a new site for them the soil should be thoroughly enriched with manure to a good depth.

New Rose Gardens.—If the formation of a new Rose garden is contemplated, the preparation of the soil should be proceeded with, so that early planting can be carried out. Almost any site may be made suitable for a Rose garden provided it is not too much enclosed by tall trees. If the position is entirely open and it is necessary to define the boundaries, the introduction of Rose hedges trained on suitable supports may be considered for this purpose. Rose hedges as screens or dividing lines may be made quite attractive features of a garden, and there is abundant material available to enable the planter to produce tall hedges, or low dividing lines, in great variety, as circumstances demand. For a tall screen few Roses are more adaptable than the Wichuraianas such as Hiawatha, Dorothy Perkins, Excelsa, and Shower of Gold, while the best ramblers for this purpose are American Pillar, Blush Rambler and Tea Rambler. If perpetual-flowering varieties are preferred, Alister Stella Gray, Mdme. Alfred Carrière and Reine Olga de Wurtemburg are suitable. For a low, thick hedge the Scotch Roses are very useful, and for one of intermediate height the Sweet Briar has much to recommend it.

Hedges. — These have made considerable growth since the summer clipping, and in most cases will need a further trimming. This should be done so soon as possible

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Housing of Winter-flowering Plants.—Cyclamen which have been growing in cold frames or pits should now be removed to their winter quarters Cleanliness being a most important factor in successful plant culture, the houses should be thoroughly cleansed and the glass washed both inside and outside, to ensure the maximum of light to the plants. The pots should be well scrubbed and if gravel or shell is used on the staging this should be sifted and cleansed prior to washing the house. Amongst other plants which may have occupied frames during the summer months, and which will require much the same winter accommodation and temperatures as the Cyclamen, are Bouvardias, Libonias and Coleus thyrsoideus. Salvias, Zonal Pelargoniums and Richardias should now be moved into the cool greenhouse, although the latter plant, if not required to flower until early spring, may be left outside for some weeks longer.

Ripening and Storing of Bulbous Plants.—Water should be gradually witheld from tuberous-rooted Begonias which are passing out of flower, but the plants should be afforded a position in full light for a few weeks longer, when they may be stored under the stages in a cool dry house. Caladiums and Achimenes on which the growth has died down may be stored away for the winter. It is best not to turn out the corms from the old pots until the new year, but to lay the pots containing them on their sides in a warm house. The same advice (as to turning out the bulbs) applies to tuberous Begonias, or if the pots containing them are required for other purposes, then the old balls of soil should be retained intact.

Bulbs for Forcing.—It will be well to make an effort to complete the potting of all bulbs which are intended for earliest forcing, whilst those which are required for late winter and early spring flowering should be potted as early in next month as possible.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Root-Pruning.—Where trees have made excessive growth and continually fail to produce a crop, the operation of pruning the roots to induce more fibrous ones to form should now be taken in hand, or so soon as possible before the leaves fall. The ground is now in a warm condition, and fresh roots will form before the winter. Trees growing on strong, loamy soils are more apt to require root-pruning than those on light soils. In the case of large trees, only half should be done at a time, leaving the other half for next season, otherwise the trees receive a check. Take a trench out about four or five feet from the stem, and about three feet deep, and cut through any strong roots as the work proceeds, trimming the ends left with a sharp knife. Some of the soil round the base of the tree should be moved with a fork, and also underneath so far as possible to determine if any roots penetrate too deeply into the subsoil, and if so, these should also be severed. As the work of filling in the trench proceeds, some wood ash and old mortar rubble or coarse bone-meal may be incorporated with the soil, but on no account use any organic manures, or the growth will tend to become too strong again in a year or so. The soil should be rammed very firmly, and care should be exercised in not damaging the roots. When finished, lightly fork the surface under the tree, and give a light mulch of well decayed manure. Root-pruning should not be attempted unless necessary, but if done carefully the results will be apparent in a season or two by the medium-sized growth which is made instead of the strong, rank shoots, and a corresponding increase in the number of fruit buds.

Gathering Fruit.—Continue to harvest all fruit as it becomes ready, doing so only on fine days when the fruit is dry. Particular care should be taken with the late varieties of Apples and Pears, as the better these are gathered, the longer will they keep sound.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Peaches.—Trees planted out and growing in borders in the early house, and which may need to be root-pruned, should be dealt with at once. In cases where trees have ceased to be fruitful they should be removed and replaced by vigorous young specimens taken from the walls outside. Specimens of large size which have been kept in good condition by having their roots annually restricted will lift quite easily and soon recover, providing a little extra care is given when carrying out this work. Before lifting it is important that the soil should receive one or two good soakings of water a day or so before lifting takes place. A deep trench, about four feet from the bole of the tree, should then be taken out, gradually working under the ball of soil and severing any roots that are inclined to grow downwards. So treated the specimens may be removed with little danger of disturbing the soil about the surface roots. The trees will soon recover, and will force with safety. After planting, the soil should receive a fair quantity of tepid water in order to settle it about the roots of the trees. Tie the trees loosely to the overhead wires, and syringe them frequently; if necessary shade the roof glass for a short time. All old fruiting wood should be cut out as well as the surplus growths that are not required for furnishing the tree. The work should be carried out quickly, but with all possible care. It is therefore a good plan to prepare a sufficient quantity of soil before the lifting takes place. Ordinary loam, with plenty of lime rubble, wood ash and charcoal added, will form a suitable mixture, but no manures of any description should be added.

Late Peach House.—After all the fruits have been gathered, the old fruiting wood should be removed so soon as possible to allow the sun and air to circulate freely, and to ripen the young wood to be retained for next season's crop. This is most essential, especially where the young growths have been tied in too freely. Ventilate liberally, and if there is any evidence of insect pests being present spray the trees with an insecticide.

THE KITCHEN GARDEN.

By WALTER Y. STAWARD, Gardener to Mrs. JOHN FEENEY,
The Moat, Berkswell, Warwickshire.

Lifting Potatos.—The Potato crop should be lifted so soon as possible, as, owing to excessive rains, Potato blight is very common this season. Place the tubers in an airy shed to dry and sort them over, removing all diseased and damaged specimens. Do not leave the Potatos too long uncovered, as they will soon turn green and be so rendered unfit for use.

Celery.—As the plants become ready for earthing-up no time should be lost in performing the operation; the leaves should be dry and the soil in good condition for working. Scatter plenty of soot over the plants and along the bottom of the trenches so as to ward off slugs, for these pests readily disfigure the blanched leaf-stalks.

Chicory.—Where this is required for salading, a batch of roots should be lifted and placed in boxes. Transfer them to the forcing house or Mushroom house for blanching. Plants required later on may be lifted and have their tops cut over and the roots placed in ashes. A position under a north wall is a suitable one in which to store the roots until required.

Autumn-Sown Onions.—In some districts autumn-sown Onions will not withstand the winter, and in such places it is a good plan to sow the seeds in a frame, using a fairly porous soil. It is better to sow in drills than broadcast the seeds. If the soil is dry give it a good soaking before sowing the seeds. Place the lights over the frame and keep it closed for some time until the seeds germinate. Plenty of air can be then admitted, but on no account should the seedlings be coddled. During very severe weather cover the lights with mats for protection against frost.

Vegetable Marrows.—Remove all fully grown specimens and store them in a dry cellar or shed, as they will keep for a considerable time. Thin out the growths to encourage the development of the young Vegetable Marrows and give an application of liquid manure to assist rapid growth before the frost makes its appearance.

Leeks.—As the plants have grown fast lately they are now ready for earthing up. Care should be taken to draw sufficient soil to the plants to afford protection during winter.

Lettuce and Endive.—Where plenty of frame space is available the soil should be dug and levelled. Firm the soil and scatter lime or soot over the surface. Place the plants in rows, and leave sufficient room between the lines so that a small hoe can be worked between the plants. When the evenings become colder, place the sashes over the plants, and admit plenty of air on favourable occasions. All the sashes should be made watertight, as the young plants will not tolerate dampness.

TREES AND SHRUBS.

CLETHRA ALNIFOLIA.

DURING August and September the above species becomes very attractive after the majority of shrubs have given up flowering for a season. The dark, green, leathery leaves are glossy and serve to make the flowers more conspicuous. The flowers are white, with long projecting stamens, orange anthers, and a strong fragrance resembling wild honey. They also last many days in fresh condition when cut and placed in water. As a member of the Heath family, the flowers are very anomalous in several respects. C. alnifolia is the only member of the genus that was known to Linnaeus, and the lobes of the corolla are so deeply divided as to appear like five petals, and he described them as such. Another peculiarity of Clethra is that the pollen is in the form of simple, oval grains, whereas in Ericaceae generally each unit is made up of four globular grains united in a mass as they were formed in the mother cells of the anthers, except that the originally square granules became rounded as they reached maturity, but remained in separate. Presumably the English name, Sweet Pepper Bush, is an American one. *J. F.*

PEROVSKIA ATRIPLICIFOLIA.

THIS shrubby Labiate is one of the most beautiful of all late-flowering subjects, and although it is quite hardy over a considerable portion of these islands it is by no means common in gardens. A native of Afghanistan and the Himalayas, P. atriplicifolia may be described as a slender, open-habited, deciduous shrub up to about four feet in height, with grey-green, or almost white, downy leaves an inch or two in length and about half as much in width. The flowers, which appear throughout the late summer and autumn at the extremity of the shoots, are a lovely violet-blue, a colour which is intensified by the whiteness which covers the stems and the whole of the inflorescence, except the corollas. Though undoubtedly a lover of sun and heat, I have found P. atriplicifolia very disappointing in thin, light soils. It appears to need a good, rich loam with plenty of depth. In most districts it is probable that this shrub is best pruned back to near the base in spring. *J.*

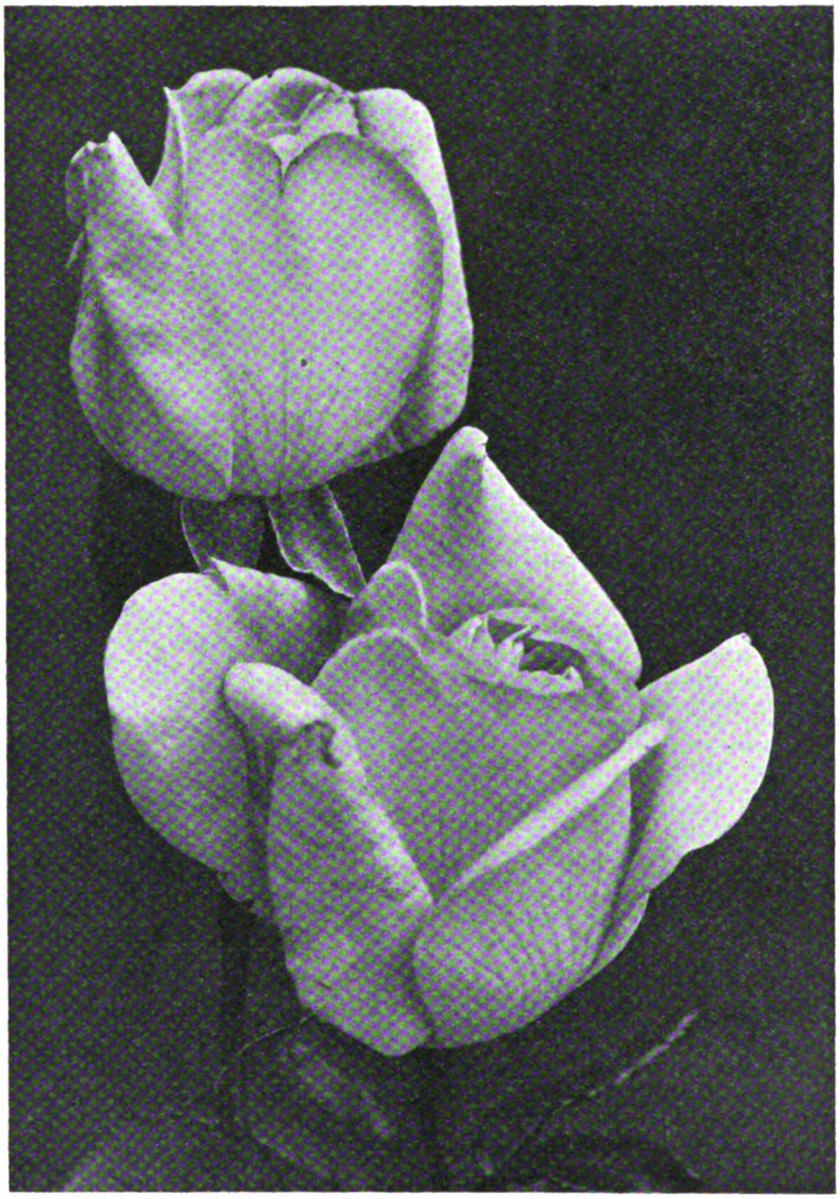


FIG. 76.—ROSE NORMAN LAMBERT.

N.R.S. Gold Medal, September 11 (see p. 233).

ORCHID NOTES AND GLEANINGS.

CATTLEYA JOHN HENRY.

The first flower of a superb pure white Cattleya, raised in the collection of Baron Bruno Shröder, The Dell Park, Englefield Green (gr. Mr. J. E. Shill), gives a remarkable instance of success in progressive hybridising with a definite object in view. The object in this case was an improvement upon other fine white forms raised at The Dell. C. Astron (Dusseldorfei Undine × Harrisoniana alba), flowered at The Dell in 1914, and was crossed with C. Lady Rowena (Suzanne Hye × Warneri alba) which flowered there in 1915. Thus albino forms of C. Gaskelliana, C. Mossiae, C. Warneri, and C. Harrisoniana were combined to form one of the best and most perfectly formed of pure white Cattleyas —C. John Henry. The main feature is of C. Warneri alba with its important and well-displayed lip, while C. Harrisoniana alba imparts firmness of substance.

CATTLEYA SUNSTAR.

Messrs. Cowan and Co., Southgate, send the first flower of this new development of their strain of fragrant, bright yellow Cattleyas, the result of crossing their C. Sibyl (Dowiana × iridescens) of 1914 with C. triumphans (Dowiana × Rex). The species concerned in the new production are C. Dowiana (twice), C. Rex, C. bicolor and C. Eldorado.

C. Dowiana influences the form of the flower; C. bicolor does not appear except in the extra firm substance, and C. Eldorado imparts its delicate fragrance.

The sepals and petals of C. Sunstar are bright chrome yellow with a lighter midrib to the petals. The front and margins of the side lobes of the lip are crimson-purple, the broad disc golden-yellow, and the base blush-white with purple lines.

CATTLEYA FABIA.

Although raised so long ago as 1894 Cattleya Fabia is still one of the brightest and best of the autumn-flowering hybrids; moreover, the plants grow freely and do not present any difficulties to the average cultivator. There are many varietal forms for others have raised the hybrid since it first appeared and its parents, Cattleya Dowiana and C. labiata both show considerable variation, the latter being particularly variable in form and colour. So many new hybrids are offered now-a-days that it is well to bear in mind the good qualities of tried and tested Orchids. *C.*

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

HIBISCUS MANIHOT.

This handsome plant, although generally regarded as and treated as an annual, is really a perennial and if it is desired to grow it as such it should be given the same treatment as Erythrina Crista-galli, keeping it dry during the winter. A number of shoots will then start from the woody root-stock during the spring, and grown in this way it makes a handsome specimen.

But for the present I shall consider it as an annual; it is a quick-growing plant and seeds may be sown towards the end of February, or any time during March, in a warm greenhouse. The seedlings, when large enough, should be pricked off singly into small pots, afterwards potting them on as they require it. Being a strong-growing plant it succeeds quite well in any good potting compost, and may be flowered in six inch or seven inch pots.

The large, sulphur-yellow flowers, with a dark blotch at the base, are very fugacious, but are produced in quick succession.

HIBISCUS TRIONUM, SYN. H. AFRICANUS.

This is a hardy annual which may be used for 'the greenhouse, succeeding under the same treatment as H. Manihot.

HUMEA ELEGANS.

This graceful plant is usually classed as a biennial, but for our purpose we may regard it as an annual. The seeds are usually sown during August, but we have at Kew a number of plants four feet to five feet in height which were raised from seeds sown last November.

Notwithstanding, I would advise sowing the seeds during August in a cool greenhouse. The seedlings may be pricked off into shallow boxes and remain in the boxes until they are large enough to be placed singly in small pots, using, during their younger stages, a fairly light compost. If subsequently transferred to 48-sized pots they should keep satisfactorily during winter. Early in the new year they should be shifted into six-inch or seven-inch pots, and, later, well grown plants may be cultivated in eight-inch to ten-inch pots.

The receptacles should be well drained. The compost should consist of good, mellow loam, mixed with a little leaf-mould and sufficient sand to render the compost open and porous. This beautiful plant is generally regarded as being very troublesome to grow successfully, but it is by no means difficult except in its final stages. Great care must be used during the last potting, and water should be very carefully afforded at this stage, until the roots obtain a good hold of the fresh compost.

I suspect this plant is usually spoiled by keeping it too close and warm; cool, airy treatment is essential at all stages. A winter temperature of forty-five degrees is sufficient. Humea elegans is somewhat subject to attacks of green fly, which must be kept down by frequent light fumigations. White fly has also proved troublesome and must be kept in check. *J. Coutts.*

(*To be continued*).

NEW HYBRID ORCHIDS.

(*Continued from July* 19, *p.* 42.)

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Andromeda	B.-C. Digbyano-Warneri × C. armainvillierensis	G. W. Bird, Esq.
Brasso-Cattleya Corrientes	B.-C. Ilene × C. Hardyana	Dr. Lacroze
Brasso-Laelio-Cattleya Eileen Low	L.-C. Hy. Greenwood × B.-C. Digbyano-Trianae	Stuart Low.
Brasso-Laelio-Cattleya Gertrude Fannin	L.-C. brugensis × B. Digbyana	Sanders.
Brasso-Laelio-Cattleya J. M. Black	L.-C. Firminii × B.-L.-C. The Baroness	Flory & Black.
Brasso-Laelio-Cattleya Mrs. J. Emsley	L.-C. Charlesworthii × B. Digbyana	Mansell & Hatcher.
Cattleya Aphrodite	C. F. W. Wigan × C. Alexandra	Flory & Black.
Cattleya Colin Shill	C. Kienastiana × C. Fabia	Clement Moore, Esq.
Cattleya John Henry	C. Astron × C. Lady Rowena	Baron Bruno Schröder
Cattleya Joyce Hanmer	Parentage unrecorded	R. Gerrish, Esq.
Cattleya Minnetonka	C. Octave Doin × C. Luddemanniana	Clement Moore, Esq.
Cattleya Mona	C. Regina × C. Dowiana	Cowan & Co.
Cattleya Rubicund	C. Alexandra × C. Rhoda	Flory & Black
Cattleya Sunstar	C. Sibyl × C. triumphans	Cowan & Co.
Cypripedium Unique	C. Fairrieanum × C. Rothschildianum	Sanders.
Dendrobium Aoyama	D. moniliforme × D. aduncum	Baron Iwasaki.
Laelio-Cattleya Apperley	L.-C. Hyeana × L.-C. Canhamiana	Mansell & Hatcher.
Laelio-Cattleya Aviateur Tivolo	L.-C. Fresnaie × C. Schröderae	M. le Blévénié.
Laelio-Cattleya Edward Matthews	C. Hardyana alba × L.-C. Aphrodite alba	Sanders.
Laelio-Cattleya Fantasia	L.-C. Thyone × C. triumphans	Flory & Black.
Laelio-Cattleya July	C. Fabia × L.-C. St. George	Sanders.
Laelio-Cattleya Maisie	L.-C. H. T. Pitt × C. Hardyana	Flory & Black.
Laelio-Cattleya Marguerite Holroyd	C. Warscewiczii × L.-C. Maqueda	Mansell & Hatcher.
Miltonia keighleysensis	M. vexillaria × M. spectabilis	Mansell & Hatcher.
Miltonia Cravenae	M. vexillaria × M. Sanderiana	Mansell & Hatcher.
Odontioda Juanita	Oda. Brewii × Odm. Pharos	R. Gerrish, Esq.
Odontonia Joiceyi	Odontonia Pittiae × Odm. Tityus	Charlesworth.
Odontoglossum Irene Gill	O. crispum × O. Aglaon	Mansell & Hatcher.
Odontoglossum Our Duchess	O. Magali Sander × O. amabile	Sanders.
Phalaenopsis Asahi	P. Lindenii × P. Esmeralda	Baron Iwasaki.
Phalaenopsis Tokyo	P. leucorrhoda × P. Stuartiana	Baron Iwasaki.
Phalaenopsis Yoshino	P. amabilis × P. Sanderiana	Baron Iwasaki.

ALPINE GARDEN.

GERANIUM SANGUINEUM.

I was much interested in the note regarding Geranium sanguineum on page 95. It is a plant which I know growing in one of its native habitats by the thousand, and one which is wonderfully constant in colour in a wild state. In the thousands of plants I have seen wild I could never trace any real variation in tone of colour, which is just a little too flamboyant when placed beside many other garden flowers.

I have often wondered if the variety album is not of hybrid origin. It was originally found growing on the Kirkcudbrightshire coast by the late Mr. W. D. Robinson-Douglas of Orchardton, Castle-Douglas. There was only one plant, which he introduced to his garden, and from this specimen all those in cultivation have been derived. The points of difference between it and the typical G. sanguineum were well explained by your correspondent, and I have frequently wondered if it could not have been the result of the alliance of G. sanguineum and G. pratense, which occur together where this white form was found. I have had many seedlings of this white one, and every seedling produced white flowers with the exception of one, which had the typical flowers of G. sanguineum, and had also its dwarfer and more prostrate habit.

Regarding G. lancastriense, which is generally classed as a form of G. sanguineum, I may state that some years before his death the late Mr. Farrer visited Walney Island, in company with a friend of mine, and that he collected there some Geraniums differing in colour and tint from the ordinary G. lancastriense. I believe these would have been distributed from the Craven Nursery had it not been for the untimely death of Mr. Farrer. That eloquent writer spoke of these forms as harking back to G. sanguineum, but with the close-growing habit of G. s. lancastriense. I look upon G. s. lancastriense as one of the best rock plants we have, and I should certainly be inclined to include it among the "hundred best rock plants." It evidently flowers more freely in a sandy soil and in full sun than in a richer compost or in partial shade.

IRIS TECTORUM.

This, the Fleur de Lis which decorates the roofs of so many Japanese thatched houses, is not nearly so well known as it should be. It seems fairly hardy and I grew it for a number of years on the roof of a low outhouse in a garden near the sea in the S.W. of Scotland. It is an exquisite Iris with flowers of a delightful lilac with a conspicuous white and lilac crest. There is also a pretty white variety. It grew about a foot high with me. I did not cultivate it on thatch but on a concrete roof with about three inches of soil. This Iris should be borne in mind by those who have a sunny rock garden. *S. Arnott.*

NOTICES OF BOOKS.

Manual of Cultivated Plants.*

PRACTICALLY this is a dictionary or encyclopaedia of cultivated plants; it is not merely descriptive, but gives information of a useful and varied kind. The plants included represent all parts of the world, yet the author in the preface, or "The Purpose," admits that the limits of the book are indefinite. Indeed, there could not be finality or limit in a work of the kind without making the book cumbersome, expensive, and beyond the reach of most people likely to use it. The plants dealt with are therefore a selection according to personal judgment, leaving the question open for the inclusion of omissions or additions in a subsequent edition.

The author aims at giving comparable descriptions of genera and species brought together from various parts of the world, and that is as it should be in any flora. Under "Terms and Names," an excellent glossary is given that cannot fail to be of great service to students; but the author sometimes, apparently, forgets to include some of the terms he uses, such as "choripetalous," and "plur-annual," the latter applied to Erysimum Perofskianum, and which would mean annual, biennial, or perennial. The latter term could only apply to some other species. Cheiranthus Allionii is placed under C. Cheiri, and said to be a hybrid, which it is, but the older name for the hybrid of the same reputed parentage, namely, C. Marshallii, seems to have been forgotten.

The key to the families, and the synopsis under each genus are up-to-date methods of simplifying the book and assisting the student to find any particular species without having to read the full description of each. The book begins with the descriptions of cultivated Thallophyta (Agarics), Pteridophyta (Ferns), and Selaginellaceae, It follows on with Spermatophyta (Cycads, Ginkgo, Taxus, Pines), then with Pandanaceae, Aponogetonaceae, Alismaceae, Butomaceae, Hydrocharitaceæ, Gramineae, and Cyperaceae; and so on through what we know as the division Incompletae or Monochlamydeae, to the order which includes Mesembryanthemum, with sepals and petals. After two more families one arrives at the Caryophyllaceae. This, no doubt, is an up-to-date sequence of affinities or allied families, and represents a vast amount of research that has occupied many minds in many parts of the world. No careful student can go far without seeing the close affinity between Chenopodiaceae, Amarantaceae, Polygonaceae an dother orders with the Caryophyllaceae and their allies. The nature of the seeds, the embryos, and the pollen show it, in spite of the fact that these two divisions of Dicotyledons are so widely separated in European floras.

Notwithstanding the above innovations, a British student would soon feel at home with the book, for the greater number of the 3,665 species it describes are familiar plants in our gardens. A few names are changed, though synonyms are given. Thus we find Roripa for Radicula or Nasturtium (Water Cress); Lobularia for Alyssum or Kœniga maritima; Bergenia for Saxifraga or Megasea; and Hydrangea opuloides for H. hortensis. The author is fond of Latin names for all garden plants, so that Sweet Pea Cupid rejoices in the double diminutive of Lathyrus odoratus, var. nanellus; Rudbeckia Golden Glow becomes R. laciniatus, var. hortensia. Girasole is the original form of Jerusalem Artichoke, and surely is better than the recently imposed "Sunroot."

The text is in large type for generic descriptions and in small type for specific descriptions, but in every way excellent, and the book is packed with information from end to end. A clear index includes every species, so that the book is worth its price to any student.

IMPERIAL BOTANICAL CONFERENCE.

(*Continued from p.* 200).

CONTINUING, Lieut.-Colonel A. T. Gage stated that the Association should not conflict in any way with local societies by publishing work or reviews of work; that its main aim should be the co-ordination and complementing of investigations in all branches of the science by furnishing information as to what work is in progress or in contemplation, where and by whom, how and to what extent supported, where help is required, where help could be given, and so forth.

Professor S. Schonland, Ph.D., dealt with "Some difficulties of the Botanical Survey of the Union of South Africa." The following points were chiefly considered:—the vastness of the territory, large parts of which are botanically quite unexplored; the difficulties and expenses of travelling; the absence of reliable topographical maps; the incompleteness of the available data as regards meteorology, geology and soil-chemistry; the very few workers; the diversity of the flora even in comparatively limited areas in the coast-belt; the uncertain seasons with the consequent difficulties in the study of plant successions (especially in the south-east area); the rapid changes in the flora owing to the influence of man, and the fact that the taxonomic knowledge of the South African flora is very incomplete.

Dr. I. B. Pole Evans, C.M.G., communicated a paper dealing with the general questions from experience gained in South Africa which has a botanical survey now six years old. It is organised by the Director, who is the chief botanist for the Union, assisted by a small committee of Government officials and independent botanists. There are five administrative areas, each in charge of a resident botanist whose post is honorary, but who receives an allowance when working for the survey. Regional herbaria are maintained and all material is duplicated in the National Herbarium. There is a post at Kew for a worker in the survey and whole-time workers are being appointed in S. Africa. A complete botanical survey of the Empire would lead to important scientific and economic results. Evidence of the value of this survey is to be found in the work done at Kew and in the colonies, even with the present limited facilities. The work would illuminate the interrelations of the many vegetational types and disclose their agricultural, industrial and economic possibilities. Essential aspects of the work would be the publication of floras, handbooks, etc., the upkeep of a central herbarium the free interchance of plants of economic importance, the establishment of plant introduction stations in all parts of the Empire, and the interchange of all kinds of botanical material and literature.

The central clearing house of the survey would be Kew. A meeting of the survey officers should be held at least every three years and preferably, in turn, in various parts of the Empire. The discussion of this and related problems in further sessions was such that it is apparent that the need of co-ordination is earnestly desired both by workers in this country and in the Dominions. It was already brought out, moreover, that the Botanical Department of the British Museum is, as its sister Herbarium at Kew, keenly interested in working out the flora of the Empire. Perhaps insufficient attention was paid to considering the cryptogamic floras, but if a satisfactory scheme were worked out the lower plants would not suffer.

(*To be continued*).

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 78-84).

(*Continued from p.* 200).

ENGLAND, SOUTH.

HAMPSHIRE.—The large quantity of Apple and Pear blossom last spring was a conspicuous feature in the landscape everywhere during a period of sunless weather and heavy rains. The resultant crops are meagre and not comparable to the wealth of bloom that wreathed the trees with beauty. Bush-trained Apple trees of Lord Grosvenor, Rev. W. Wilks, King of the Pippins and Lane's Prince Albert are carrying good crops, but fruits of many useful sorts in the orchard and garden are deplorably scanty. The variety Deux Ans which is common in many farm orchards and occurs frequently in cottage gardens throughout the Test Valley is almost barren of fruit this year. Pears Marie Louise, Louise Bonne of Jersey, Pitmaston Duchess, William's Bon Chrétien and Beurré Superfin carry full crops but other sorts of Pears are scarce. The ravages of birds destroyed what prospects there was of a Plum crop. The soil is a calcareous loam. *F. Gooch, Bossington House Gardens, Houghton, Stockbridge.*

——The chief crop—the Apple—has turned out very disappointing as regards quantity, as there was much bloom in the spring, though during the flowering period wind and storms prevailed with very little sun, which certainly must have prevented fertilisation. Stone fruits were in bloom during very bad weather; frosts, high winds, and driving hail storms had much to do with the short crops of these fruits. Red and Black Currants, Gooseberries, and Strawberries have been very good. *George Ellwood, Swanmore Park Gardens, Bishop's Waltham.*

KENT.—In general, the majority of fruit trees flowered abundantly this spring, but Apples and Plums failed to set, partly on account of the late frosts and piercing winds from the north-east while the blossom was expanded, and probably in a lesser degree because the flowers were more or less imperfect in many instances, as last summer was not an ideal one for maturing the fruit buds. Pears are good in spite of this, but unlike the Apple, the crop last year was very indifferent in most parts. Morello Cherries are good on walls, while the dessert varieties in the open were very fine. Strawberries have been a record crop, and Raspberries, Currants, and Gooseberries, have been plentiful. The soil varies a good deal within a radius of a few miles, but those of a gravelly nature are carrying the best crops. *James Mayne, Eltham.*

——Apples and Pears have "run off" badly this last month, and are very unequally distributed through the county. Pears being especially disappointing after a fine show of blossom. Plums are absent where aphis was prevalent last year, and are very scarce; Damsons are a light crop. Black Currants were excellent and much better than for some years, and Red Currants and Gooseberries were also very prolific. *Edward A. Bunyard, Allington, near Maidstone.*

——The Apple and Plum crop has been one of the lightest ever experienced in this district, although, as was general throughout the country, the trees flowered abundantly. Lord Derby, Golden Spire, and here and there a tree of Bramley's Seedling are producing good crops. Some of the Pear trees are fairly well laden; the variety Fertility is outstandingly good. Small fruits of every kind have been excellent. *J. G. Woodward, Barham Court Gardens, Keston.*

(*To be continued.*)

---

* *Manual of Cultivated Plants. A Flora for the Identification of the most common or significant Species of Plants grown in the continental United States and Canada for Food, Ornament, Utility and General Interest, both in the Open and Under Glass.* By L. H. Bailey. New York: The Macmillan Company. London: Macmillan & Co., Ltd., 1924. All rights reserved. Price 31s. 6d. net.

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.

VI.—A JOURNEY BY THE GREAT RIVER.

DURING the night of April 22 it snowed heavily, and next morning the whole valley was white. However, the snow melted with remarkable rapidity. Tsetang was a slough and we started eastwards in bright weather.

At first there was no change in the vegetation. We travelled over gravel slopes covered with thin grass and thorn scrub (Sophora), and over sand dunes close by the river. On the cliffs were Ceratostigma and the rosette Selaginella, so typical of the arid river gorges in Yunnan. The Tsangpo valley here, indeed, rather resembled that of the Yangtze in north-west Yunnan. The river itself flowed sluggishly, in several channels, over acres of sand.

On the following day, however, in the course of a six hours' march, a great change came over the vegetation. Incipient forests of Juniper began to appear high up on the flanks of the mountain, where the snow still lay; and stunted specimens were found right down to the river. What at first sight appeared to be Gorse was in flower on the sandy slopes. Examination showed it to be a fine species of Caragana, of an even deeper gamboge than Gorse, but with exactly the same habit, though even more prickly. A third species of Willow was met with in the next village; and then the gravel slopes became clothed with a continuous bushy scrub composed of species already recorded but growing with a profusion not hitherto met with: Artemisia, Berberis (almost in flower), Buddleia (in flower), Spiraea, Juniper, Sophora, etc. The river had now collected itself and flowed more swiftly in a steep-sided trench, filling its bed. In fact it looked very much like the Mekong or the Salween. As the gorge narrowed, the vegetation became richer. A species of Birch appeared, and another Buddleia almost in flower. A stream of water came tumbling down the bush-clad slope—hitherto most streams had been lost in the sand long before they reached the Tsangpo; and by this stream grew a Primula which, if it was not P. sikkimensis, was at least indistinguishable from it in fruit. A miserable little squinny-flowered Clematis was also in bloom here.

But the resemblance to the Salween and Mekong gorges did not end with the mere appearance of the Tsangpo gorge; it extended more and more to the vegetation. A species of Cotoneaster, which I dare swear I had seen before, was coming into leaf, and that stringy twiner with the beaked capsules could only be Codonopsis convolvulacea! Familiar and loathsome thing! And next, on the rocky slope, rooted in sand, an Incarvillea, four feet high. Happily, it makes ill provision for getting rid of its seed, and I collected a good sample in the hope that it might live to 1925.

Then on the grassy patches were streams spilled over, making the grass green. A large Gentian was abundant, and a Tussilago was in flower. In the thickets, tall Larkspurs flowered in due season, and on the rocks the green rosettes of a splendid Androsace already showed up. This latter was in the way of A. spinulifera, but on a much bigger scale, the stems being over a foot high, a score or more springing from the clump. At the village of Trap, mountain Rice was grown—the terraces were already green, though the altitude is 11,700 feet. Small clumps of Bamboo testified to a more genial climate. The Peach blossom was practically over, and the buds of the Walnut were fattening. At Trap the Tsangpo plunges into an even more profound gorge, and we could follow it no further for the time. It was necessary to make a détour either to the north or to the south. As Major Bailey, in 1913, had gone south, we decided to go north, and on April 25 we crossed the river in skin coracles (Fig. 78), and proceeded up a valley.

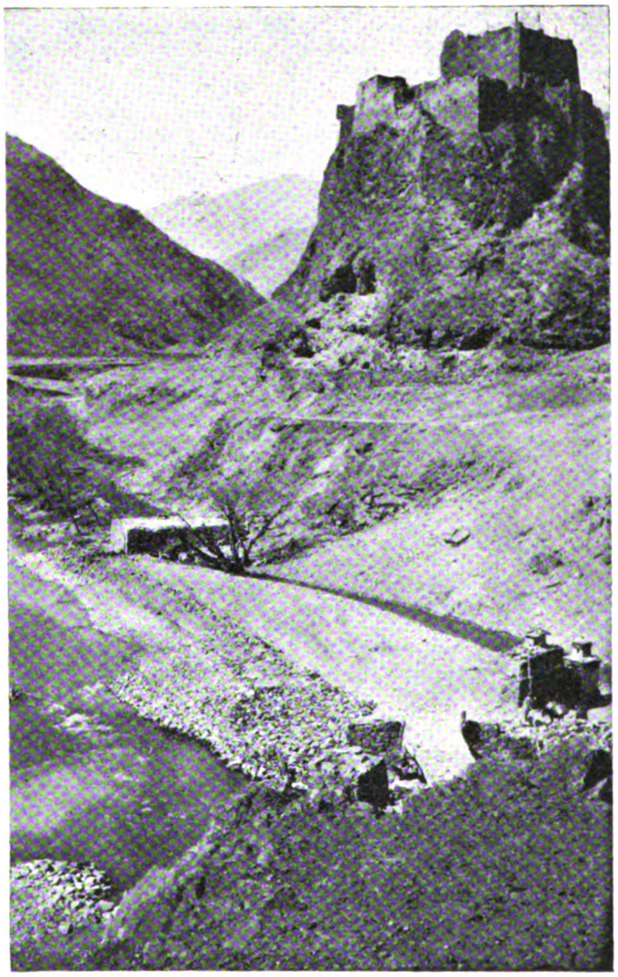


FIG. 77.—A VALLEY ON THE LHASA ROAD; BARREN PLATEAU COUNTRY, 14,000 FEET ALTITUDE.

Here we saw a Primula of the Sikkimensis section in profusion, growing four feet high, and in a bog I found another species in fruit, perhaps allied to P. Wardii. It was not, however, till two days later that we got into good botanical country.

Travelling up the valley, at an altitude of about 13,000 feet, we found a mauve Primula allied to P. denticulata flowering on the grassy banks of streams; though not until we had crossed the pass did we see it in profusion. Higher up on an ancient moraine I found two more species of Primula, but on these it was necessary to hold post-mortems. One was certainly a "Nivalis," bearing a family resemblance to P. pulchelloides; the other might have been near P. lichiangensis. Above the moraine we entered a lovely glen filled with bushes and small trees, not one of them in flower, except a small Willow. I noticed Hippophae, Lonicera, Berberis, Cotoneaster, Spiraea, Caragana, Potentilla fruticosa, Juniper, and—yes, Rhododendron, the first. This last massively clothed the sheltered slopes, just as Juniper did the exposed ones. It was an "Anthopogon," growing two to three feet high in bushy clumps, and was not far off flowering. Higher up there appeared in its company a very small-leafed "Lapponicum," forming twiggy brooms a couple of feet high.

It was a long climb to the pass, which is over 16,000 feet, and before we reached it a violent snowstorm was raging, so that above the bush line we saw little or nothing, except snow; nor in the alpine region was there anything to see as yet. We reached the summit about 4 p.m. (having been climbing then for nine hours), and the sky clearing for half-an-hour we spent a little time in the deep snow, making various observations. At 4.30 p.m. we started down.

At once we began to notice a difference in the flora. We were amongst a jumble of big boulders, moraines, and gravel screes, where stood the mummies of big Poppies. One of these carried a dozen or more single-flowered scapes on the main stem, and the patches of barbed, orange hairs which still clung to the large capsule proclaimed it an ally of Meconopsis integrifolia. On the gravel screes, conversely, grew a prickly, dwarf Poppy, many-flowered, after the style of M. lancifolia, but as prickly as any Aculeate, such as M. Prattii. Before snow and darkness finally engulfed us, I glimpsed a fat Nivalis Primula rattling its bones in the wintry wilderness; and then night closed in. Two hours in a blinding snowstorm and complete darkness, through which the tired ponies had to feel their way as best they could, brought us to a lonely monastery. The light and warmth of a hospitable monkish welcome were greatly appreciated after our twelve hours march.

It snowed all night, and was still snowing when we started down the valley next morning; but we soon got down to warmer regions, and met with the first bush Rhododendron, forming a dense scrub on the sheltered side of the valley, faced by scattered Juniper on the other. Lower down it formed a stocky tree or a compact bush. It was not yet in flower, but was allied to R. Wightii and R. Smirnowi—of the "Taliense" series.

Down here the lawns were strewn with the gold buttons of Celandine and starred with dwarf rose Primula; while a form of P. denticulata carpeted the ground with violet and mauve. Lower still we reached woods of Birch and Juniper, where the "Taliense" Rhododendron was almost in flower, and the tall spiky haulms of Incarvillea leant in every direction. About six o'clock it became quite dark in the deep granite gorge, and for the next four hours all our efforts were directed to keeping on the narrow path above the raging torrent. At 10 p.m. we reached Gyatsa Dzong, by the Tsangpo. Between midnight and one o'clock our transport arrived; but we were already asleep wrapped in our sheepskins, with our saddles for pillows, so took no further interest in the proceedings till morning.

For three days we marched down the left bank of the river without noticing any important change in the vegetation, though many shrubs were now in flower. Rosa sericea, fragrant and creamy; Clematis mon-

---

The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, and August 30, 1924.

tana, two varieties, one cream the other flushed with pink; species of Buddleia; a very ordinary Berberis, and a fine variety of Sophora viciifolia, with rich violet flowers, were the chief items. Then there were nests of Violets by the wayside, and a yellow-spathed Arisaema, and Dandelions, and Strawberries.

On April 30, we halted for the night at Trang-sa-shö, a village famous as the birthplace of the thirteenth (and present) Dalai Lama. The house in which His Holiness was born has been pulled down, and a small monastery built on the site. On the followed day we recrossed the river and reached a small Dzong: it was necessary to cross a mountain here, quitting the river for a day in order to avoid a gorge.

At this point trees descend as low as the river for the first time—Junipers to begin with, presently Pines. New shrubs appear—a species of Buxus on the limestone (its leaves turn brilliant orange), evergreen Oak, bright, yellow-flowered Piptanthus, a Rhododendron allied to R. triflorum and R. yunnanense, Elaeagnus, Euonymus, and others. Thus there is a distinct change in the vegetation about here—from thorn scrub to Conifer forest. The character of the valley, too, changes. Great sand dunes, clothed thinly sometimes with Juniper, more often with thorn scrub, appear. The river narrows, and slews round abruptly to north or south alternately as it drives its way through the mountains. The cliffs are steeper, the spurs more deeply cut out.

Crossing the mountain (14,700 feet) above the Dzong, we found the "Taliense" Rhododendron in full bloom. It proved to have flowers of a pure rose-pink, or sometimes white colour, and though neither truss nor flower is large, it is a very floriferous plant and commends itself by reason of the fact that there is no trace of purple in the pink of its blooms. In fact, it is practically the colour of "Pink Pearl." The small "Anthopogon" was also just coming into flower—white, flushed pink; but the "Lapponicum" at the summit was as woe-begone as ever. A few days later, however, I found a second "Lapponicum" in the Pine forest at a much lower altitude, in full bloom. It had flowers an inch-and-a-quarter across, of a fine rosy purple, drying lavender.

The same day we met with the "Triflorum" in thickets down in the valley. Here it was an erect and compact bush, smothered in pale yellow blooms, which were more or less brownish red on the reverse, this showing through the yellow as a sort of mahogany stain. In the forest it is a gawky shrub eight or ten feet high, with pale sulphur flowers, unstained. For by this time we had reached real forests—in the deep ghylls, Picea, Birch, and Bamboo; on the more exposed slopes, Pine; and on the driest flanks, Oak. Sand dunes and gravel cones, scantily clad with thorn scrub, might still occupy the valley bottom, but a few hundred feet above our heads was real Conifer forests, often descending right down to the water's edge.

The weather was vile; it rained every day, and snow lay deep on the mountains, blocking every pass. Howling gales made travel uncomfortable. Anything less spring-like it would be difficult to imagine; nevertheless spring flowers were coming up on every side. In bloom were Violets (three species), Podophyllum Emodi, Arisaema, Cardamine, Veronica, Ranunculus, Potentilla, Primula denticulata (almost over), and a charming, tufted Androsace with rose-pink flowers and crimson eye. This last, at high altitudes, forms definite cushions, but here it rather carpeted the ground. Besides all these there was promise in the hedgerows and ditches of Primula sikkimensis, Thalictrum, Salvia, Iris, Pedicularis, Androsace spinulifera, and other things. Yet, on the whole, there was a dearth of flowers in the valley—and for a good reason—sand. Everywhere the soil was sandy; immense dunes, where even thorn scrub had much ado to keep its head awash, were piled up mile on mile; cultivation was overwhelmed by sand. More than once we experienced its effects, when a more than usually fierce gust of wind eddied up the face of the cliff, spinning sand aloft.

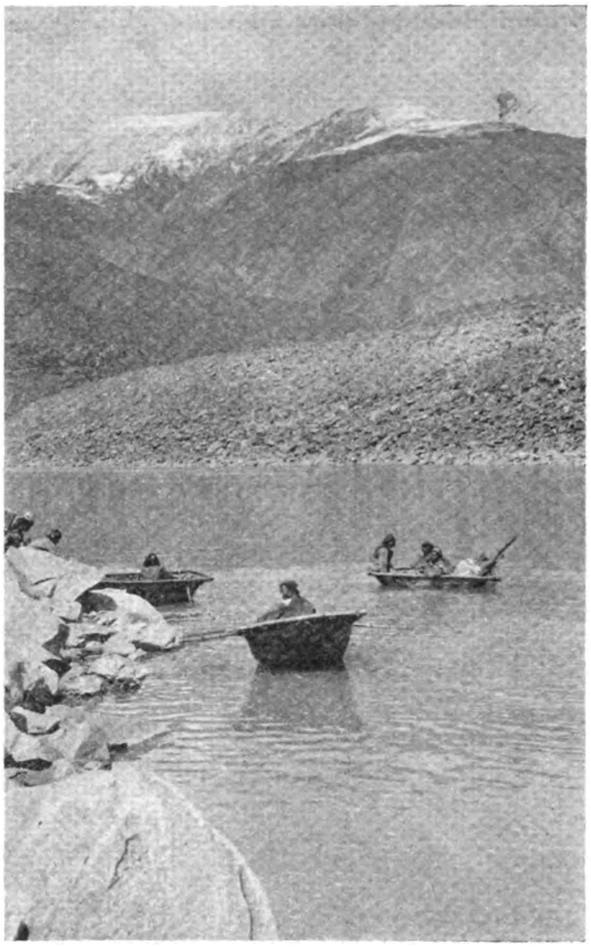


FIG. 78.—CROSSING THE TSANGPO.

And besides, there is the quick drainage of the surface to consider, so flowers are few in the valley; but every day trees and shrubs became more numerous, varied and bulky. Even the Taliense Rhododendron came down into the valley, a white-flowered variety with purple spots, and bloomed with the rose-purple "Lapponicum" and the mahogany-stained "Triflorum"—which last, by the way, is extremely pretty when wet with rain. But the most charming Rhododendron met with here was one I found in a marsh, with large, pure pink flowers—I believe one of Dauricum series, allied therefore to R. racemosum, though the fruit looks very different It is a small, erect shrub, with more or less aromatic leaves and fragrant flowers—a rare character. I found very little of it however—it is a species I must undoubtedly look out for.

Masses of yellow-flowered Piptanthus, a white-stemmed Rubus, a Ribes in full bloom, and a minute-flowered Euonymus, which forms a big bushy tree and may be a fine sight in fruit, enriched the valley lower down, with Birch, Willow and large Poplar trees, whose bronze foliage was just beginning to show up and vie with the silver whiteness of another species. But where forest occurred in the valley it was always Pine or Oak, with occasional Picea trees or Larix. We saw no more Junifer at this time.

At last, on May 11, exactly a hundred days after leaving Liverpool Street Station, we reached a part of the valley where we thought it would be convenient to settle down and start serious exploration. On one side of us rose the main range of the Himalaya, whose peaks were only a few miles distant; on the other side rose more mountains in an unexplored country. How the matter turned out will be related in due course. *F. Kingdon Ward.*

HARDY FLOWER BORDER.

SCABIOSA COLUMBARIA ROSEA.

When the above Scabious was first shown at a meeting of the Royal Horticultural Society a few weeks ago by Messrs. Isaac House & Son it was hailed with acclamation by a large number of visitors as a beautiful addition to those previously on exhibition. It was said to have been procured from South Africa by Mr. T. Hay of Hyde Park, but some doubt was expressed as to its being a variety of S. Columbaria. I have examined and compared it with living and dried specimens of the British S. Columbaria and find no difference except in colour. I have also seen dried specimens collected in various places, chiefly on the mountains of Abyssinia, British East Africa, Kilimanjaro, Nyasaland, Zambesia, Rhodesia, and southward to Table Mountain, Cape town. It is widely distributed throughout S. Africa. Needless to say it is a very polymorphous plant with such a wide distribution in Africa, not to say Europe and Northern Asia. It ascends the mountains from 3,500—10,000 ft., and should prove hardy in this country, as it has done for three years at least. It is said to show a sub-shrubby habit, but it grows in compact tufts, and has a woody rootstock in this country In Africa specimens have been gathered with a rootstock as thick as the forefinger, and that is probably not the limit. Several South African varieties have been named, but the facies of the species remains evident throughout. The cauline leaves may be simple or once to twice divided and occasionally three times in Africa. The colour of the flowers offers no difficulty. Thunberg recorded blue, violet or purplish and white flowered forms. S. Columbaria might well be developed as a garden plant.—*J. F.*

UROSPERMUM DALECHAMPII.

This South European Composite, allied to the Hawkweeds, if not a choice plant, is one of no little charm, and it never fails to attract attention Moreover, it blooms all through the season, and is often particularly lovely in autumn. U. Dalechampii makes a broad mass of tufted foliage about nine inches tall, the leaves being large and handsome and silvered with silken hairs. Above these, to a height of a foot or more, rise the flower stems, which bear at their summits large blooms in a particularly brilliant shade of Citron - yellow.—*J.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard, 1543.*

WELBECK ABBEY.

WELBECK ABBEY, Worksop, one of the country residences of the Duke and Duchess of Portland, has for long been renowned for its extensive gardens, and previous to the war it was considered one of the most beautiful estates in the country. But alas! at the outbreak of hostilities the gardens had to be neglected; flower beds were filled with vegetables; hedges and grass were left uncut and untrimmed, and paths and drives uncared for. The gardening staff was reduced to a few old men and some boys. Since that time the grounds have been divided and the kitchen and fruit departments have been leased to Mr. James Gibson, who, until a few years ago, was in charge of the gardens, but has now turned his great horticultural skill to market growing.

The responsibility for the upkeep of the flower gardens and pleasure grounds at Welbeck—two hundred acres in extent—rests in the capable hands of Mr. C. Harris, who has done yeomen service during the last five years in transforming the gardens and bringing them back to their former magnificence.

There is much to see at Welbeck. The surrounding, well-wooded country is amongst the finest in the land, and from the higher points some very beautiful scenes are obtained. The grounds, too, are rich in trees and shrubs, and the Weeping Ashes skirting the long lake are beautiful and imposing. Huge Oaks, Horse Chestnuts and Beeches abound, and Conifers are represented by some very noble specimens which flank the sweeping drives. Rhododendrons are to be seen on all sides and evidently enjoy the midland climate.

We saw the Rose garden in mid-August when the first crop of blooms was in its full glory. Mr. Harris prides himself in being able to so retard the flowering of the Roses that the maximum display is obtained whilst the Duke and Duchess are in residence during the late summer. The Rose garden is purely formal, of rectangular shape and enclosed by trim hedges of Yew. In all there are twenty-two large beds, separated by grass walks and flagged paths, the central object being a beautiful, raised stone urn, around which the central beds are symmetrically disposed. The varieties employed are Prince of Bulgaria, La Tosca, General McArthur, Richmond, Henrietta, Caroline Testout, Golden Emblem and Duchess of Wellington, and these all have a bed to themselves — in some cases there are two or three beds of the same variety—and thereby solid masses of colour are produced. There is nothing fanciful about the arrangement, but it is questionable whether the effectiveness is improved by the use of column-like specimens of Dorothy Perkins, placed here and there in the beds.

Passing through the Rose garden the East Terrace is reached, where, in close proximity to the Abbey, is another somewhat formal garden, cleverly arranged on the sloping ground, and around the magnificent fountain a mauvy-blue effect is obtained by filling the beds with Stocks, towering above which are blue and white specimens of Campanula pyramidalis. Tubs of Agapanthus occupy positions around the fountain, and the whole is surrounded with a wide border filled with Antirrhinums, Phloxes, Heleniums, Nemesias in brilliant orange and scarlet colours, annual Chrysanthemums, Salvias, Pentstemons, Cosmos, Delphiniums, Violas, columns of Sweet Peas, such as President, Powerscourt and Hawlmark Pink, and a host of other good things.

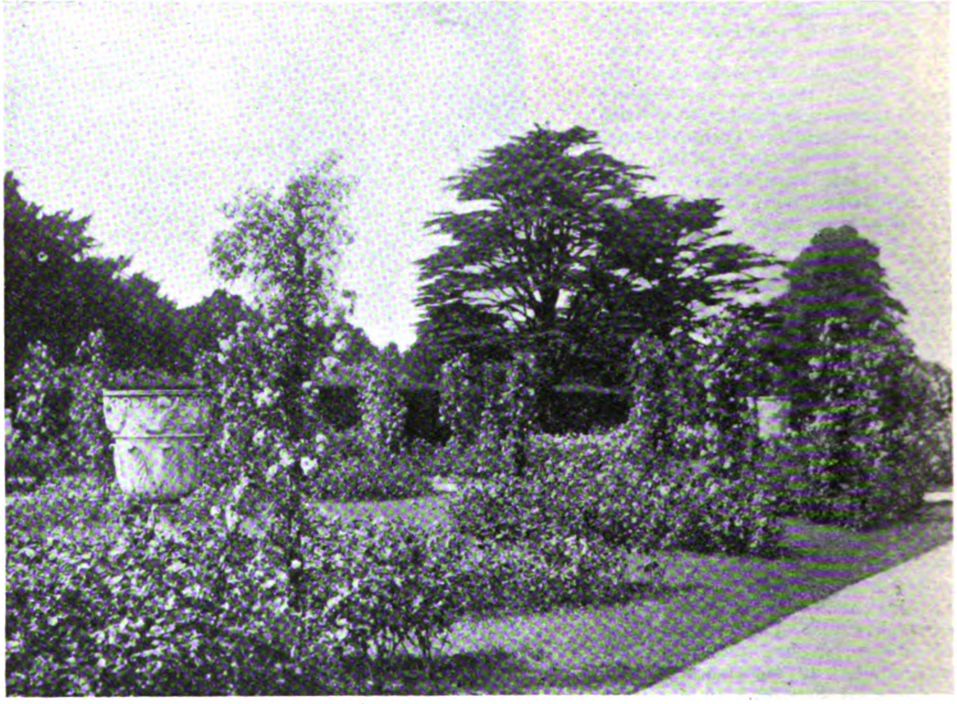


FIG. 79.—WELBECK ABBEY: THE ROSE GARDEN.

Along the South-east Terrace are beds of Antirrhinums and a bed of Lavender Grapnell Hall, which is magnificent for its deep colour, rich perfume and free-flowering habit. A few yards away, on the front of the South Terrace, is another self-contained garden surrounding a stately fountain, and where beds of brightly-coloured Antirrhinums interspersed with the white Gladiolus L'Immaculée, are the chief subjects employed amongst the trim specimens of Golden Yew.

A very pleasant walk leads to the sunken garden, which is the feature of Welbeck. It is very deeply sunk below the ground level and thousands upon thousands of tons of soil must have been excavated in making it. Yet this is not surprising at Welbeck, for much of the Abbey is below ground and it is famous for its tunnels and underground passages constructed by a former Duke of Portland. Entrance to the sunken garden is through beautifully wrought-iron gates presented to the Duchess of Portland on the occasion of her silver wedding by fifteen hundred women of the City of Nottingham. The scroll work of the gates represents vines in leaf and fruit. Descending the eighteen or so broad steps a wonderful floral picture presents itself. The area of this garden, rectangular in shape, is about two acres in extent, enclosed by a stone, Ivy-covered wall, with a Yew hedge rising above it. The garden has been remodelled within the past few years according to the wishes of the Duchess of Portland who, like the Duke, is a very enthusiastic gardener. Next the wall, a wide herbaceous border skirts all four sides, and as this covers a distance of over twelve hundred feet and is eighteen feet wide, planting in bold masses is called for—a few specimens of a variety would be lost.

A wide grass plot intervenes between the border and a stone pergola of very beautiful proportions. The massive stone pillars are over ten feet high and the stout cross bars are of Oak. Climbing Roses — such as American Pillar, Crimson Rambler, Delight Dorothy Denison, Hiawatha, and Paul's Blush Rambler, together with Actinidia chinensis, Polygonum baldschuanicum, and many highly coloured species of Vitis, cover the pillars and rafters. The Pergola walk is flagged and sufficiently broad to allow two people to walk abreast in comfort. The positions between the pillars are occupied by beds about four feet wide and fifteen to sixteen feet long, and in number there are one hundred and ten of these, the replenishing of which calls for skilful handling when variety and colour are the two main objects. Stocks in many colours are used, as also are Antirrhinums, and some very pretty effects are obtained by employing Gladioli in conjunction with Linarias, Violas, Stocks, Antirrhinums and Larkspurs. Galtonia candicans also serves to break the level of many of the beds, and its white bells form a pleasing contrast to the plants with which they are associated. The ends of the Pergola are semi-circular and enclose a small Lily pool on the one hand and a bathing pool on the other.

Passing through the Pergola glimpses of the herbaceous border are obtained, with the colours changing as in a kaleidoscope. Colour is provided by the glowing pink of

Phlox Selma, or the yellow of Rudbeckias, or the brilliant scarlet of Dahlia Coltness Gem; again a clever piece of topiary work in Box just fills the scene, or it may be a large specimen of a pink Hydrangea catches the eye.

The herbaceous border is a dazzling riot of colour. It would be too large a matter to detail all the plants grown there. Antirrhinums in great masses and bright colours are freely employed, and Phloxes in variety, Dahlias, Sidalceas, Salvias, Cosmos, Chrysanthemums, Rudbeckias, Campanulas, Spiraeas, Oenotheras and Sweet Peas are but a few of the subjects which help to maintain the brightness of the border.

The sunken garden fittingly serves a dual purpose, for recreation in the form of tennis is provided by two hard courts situated in the centre. Happily, the courts are enclosed by a tall Yew hedge. *R.*

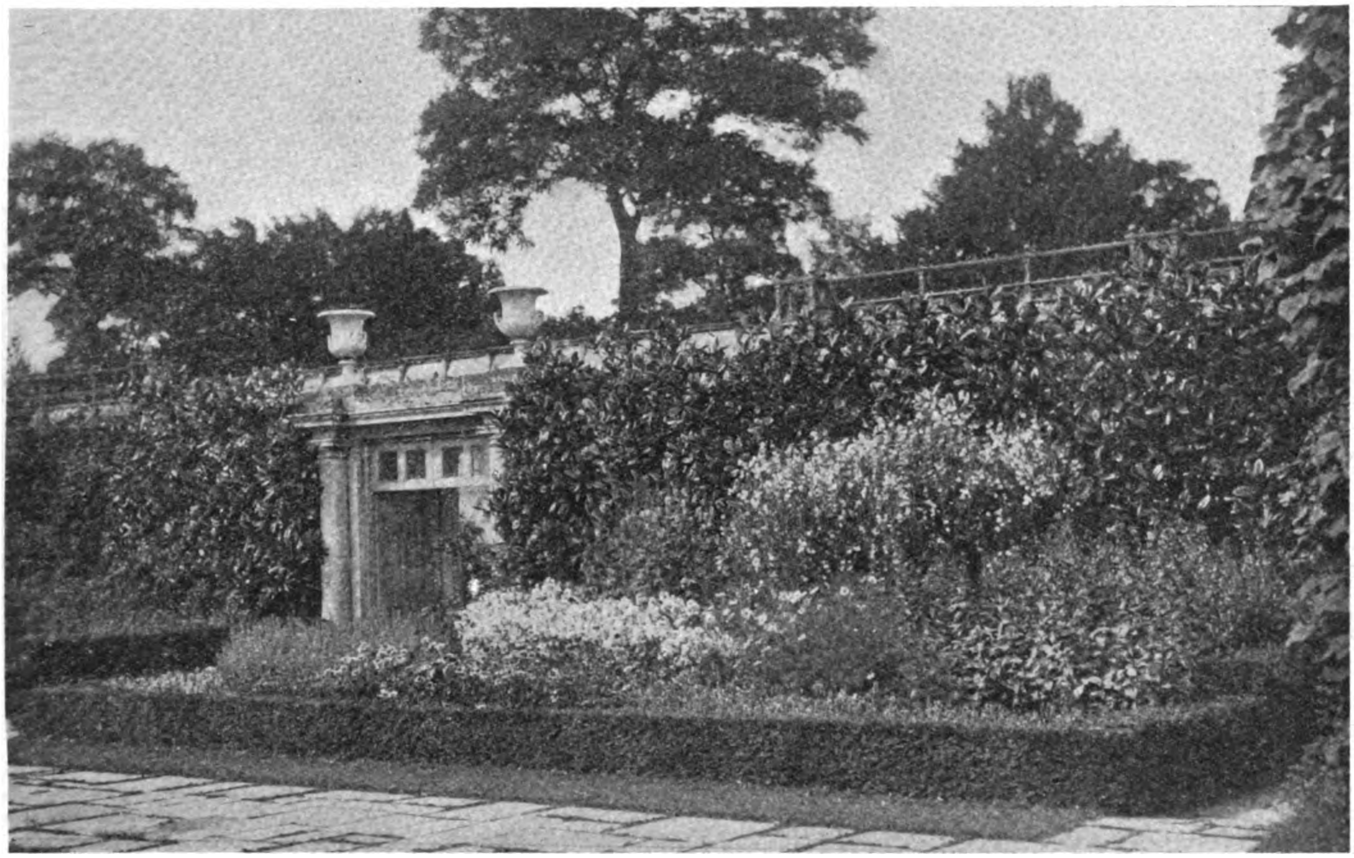


FIG. 80.—WELBECK ABBEY: A BORDER IN THE SUNK GARDEN, WITH MAGNOLIA GRANDIFLORA ON THE WALL.

BULB GARDEN.

THE LILY SEASON IN SCOTLAND.

Lilies and Roses of every description have almost equally suffered during the season now rapidly drawing to a close. While rain of a heavy and destructive (rather than energising) character was abundant during the growing and flowering months, sunlight was very conspicuous by its absence. Nevertheless I was astonished by the freshness and beauty of the majority of the exhibits at the Stranraer Flower Show, and especially by those of Messrs. Thomas Smith and Sons, who have recently gained many first prizes for exceptionally fine flowers of splendid form and colour, at the leading Scottish exhibitions. While the great improvement in atmospheric conditions which came to us so unexpectedly in the beginning of September considerably improved the aspect of late-flowering plants, it arrived much too late for such beautiful and odorous Lilies as Lilium regale, so impressive here last year; the Japanese L. longiflorum, and the Levantine L. candidum, familiarly known as the Madonna Lily, which, whether as regards its exquisite aspect, or the fragrance whereby it scents the whole garden, is well worthy of so classical a name. But, like most pure white varieties, it is influenced by atmospheric changes and especially by a period of excessive rain. In my own flower borders more than half the blooms had to be removed, as they were soaked completely through; while the flowers of L. longiflorum were for the most part ruined beyond redemption.

In Logan Gardens, where high Beech hedges shelter Mr. Kenneth A. McDouall's collection of the oriental and American Lilies from the disastrous effects of violent winds and rains, Lilium giganteum had, early in July, the finest flowers I have seen anywhere this year. I also saw, at a somewhat later period, in the same famous garden, a magnificent display of Lilium pardalinum, L. Burbankii, and the distinct L. Humboldtii, the last being one of the noblest Lilies of which America can boast. In more propituous seasons, L. nepalense (which flowers there marvellously in the open air), L. philippinense and L. Grayii are usually grown at Logan with gratifying success.

At Monreith, where Sir Herbert Maxwell has one of the most comprehensive collections of Lilies of every conceivable description discoverable in Great Britain, such impressive species as Lilium giganteum, L. regale, L. Sargentiae, and the wondrously beautiful Lilium Szovitzianum, are magnificently grown. At Castle Kennedy, the proud possession of the Earl of Stair (who is chiefly a cultivator of grand Rhododendrons and Azaleas), the predominating Lily is L. giganteum, which, extensively planted there by Mr. Findlay, now superintending Greenwich Park, has occasionally attained in the romantic precincts of the ancient Castle of the Kennedys, and even in the shadowy "Wild Garden" of the Countess of Stair, to a height of thirteen feet. Of late years, in addition to its achievements at Logan House, in Wigtownshire, it has reached a very considerable height at such notable Ayrshire gardens as those of Eglinton Castle; also Cavens, Southwick, and Arbigland, in the beautifully wooded Parish of Kirkbean.

It is very unfortunate for lovers of such truly imperial flowers, so stately in their growth and commanding in their floral impressiveness, that the various exquisite and fragrant forms of Lilium speciosum come into flower so late in the year, a characteristic, which, according to my own experience, has often prevented them from achieving success. *David R. Williamson, Drunmore.*

VEGETABLE GARDEN.

POTATOS FOR EXHIBITION AND GENERAL UTILITY.

Varieties of Potatos come and go so quickly that nowadays one has to think for a moment to recollect whether this or that variety is a comparatively new sort or not, and as to what its claims are. I have been very successful with the following relatively new varieties this year; I have not attempted to place them in any order of merit, only dealing with them as they occur to me at the time of writing.

Di Vernon.—This is certainly one of the most distinct of Potatos on the show table on account of its very pretty markings of purple around the eyes. It is a pebble-shaped tuber of the first-early class, and as such gives a remarkable good yield. Good as a cooking variety, it has the additional advantage of being immune to wart disease.

Katie Glover.—This is a second-early variety of pebble shape. It is a heavy cropper, and as a cooker it is excellent. On the exhibition stand it is very effective, the eyes being tinged with a pleasing carmine colouring. This also is an immune sort.

Arran Rose.—This has a very pretty tuber of pale rose-pink colour. It may be relied on thoroughly as a first-early, and is an excellent culinary variety, with good, white flesh. It is a kidney-shaped tuber of the immune class, and has proved a really reliable variety.

Arran Comrade.—This is a most reliable sort of the second-early class when planted in the ordinary way, but it may also be used to provide early yields in July by greening and sprouting the seed tubers thoroughly. Being a wart resistant variety no doubt accounts largely for the popularity it has gained, and over and above this fact, and its great usefulness for show purposes, comes the great advantage it possesses as a store Potato, for it keeps as well as, perhaps, any variety I know, being of super-excellent cooking quality at all periods from quite early till late in the season. It is a round, white tuber, and gives a very fine yield.

K. of K.—This is a coloured round Potato of the second-early section. Besides being a good cooking variety and of enormous cropping capability, it is a very fine exhibition sort, the tubers being on the large size and very shapely, with shallow eyes and tinged with carmine colour. Like the foregoing, K. of K. is an immune variety.

The Bishop.—This is a very distinctive white kidney Potato of handsome appearance. The plant is a good cropper and immune; it is also an excellent culinary sort and will keep well when stored. The cooking qualities will please the most critical.

Ben Cruachan.—This is one of the best round Potatos introduced, and carried off the premier honours in the Ormskirk trials. It is an immune variety of thoroughly sound and robust health, yielding magnificently. On the show table it is remarkable for its very shallow eyes, and, as a cooking variety, is of excellent flavour and texture. It may be classed as a maincrop Potato, and should rapidly become a general favourite, also when grown in quantity it should prove an excellent commercial sort.

SUGAR PEAS.

A vegetable that has been known for a considerable time on the Continent, especially in France, and that is gradually winning favour in this country is the edible Pea known to us as the Sugar Pea. In France it is termed the "Mangetout" or "Pois sans parchemin," which literally translated mean "prodigal" and "Pea without parchment." The inner lining of hard skin, usually associated with garden Peas is absent in this type. The plant is prodigal in its yield, and the pods are cooked as a whole, that is pod as well as the contained seeds.

The seeds should be sown in the open in the usual way about the end of May. The plant is tall growing, reaching a height of about eight feet, and consequently requires staking, but as it is very free yielding this is well compensated for, and the only other attention it requires is that afforded the ordinary culinary variety.

The pods should not be allowed to become old before they are picked, but gathered when tender and fleshy, and the only preparation required before cooking is to remove the stalk and tip of the pod, a matter easily accomplished by a pair of sharp scissors; after that they may be boiled in the same manner as French Beans.

This Pea makes a very interesting additional dish for a comprehensive collection of vegetables on the exhibition table, and from the enquiries as to its nature one can easily gauge how little it is known to the average person. *E. Beckett.*

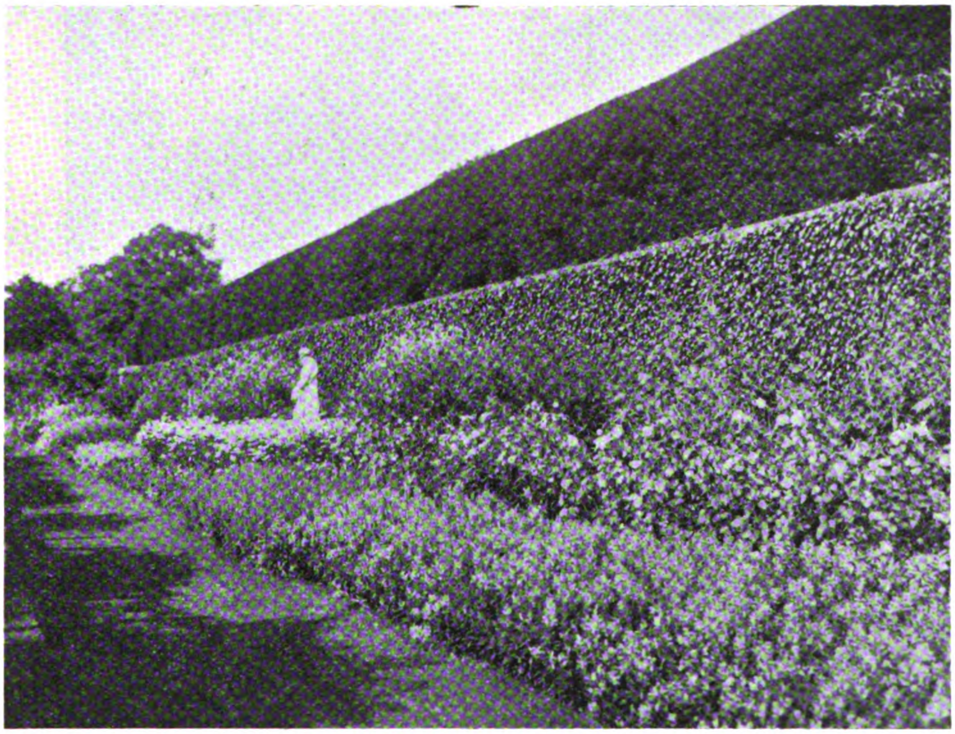


FIG. 81.—WELBECK ABBEY: THE SUNK GARDEN, SHOWING A LONG BORDER WITH A YEW HEDGE BEHIND AN IVY-CLAD WALL.

HOME CORRESPONDENCE.

Lilium giganteum.—In the note about this Lily on page 179 doubt is expressed whether anyone has attempted to discover "how long it would continue to flourish provided the young plants were not removed." I can answer for clumps that have remained undisturbed for about twenty years. It is true that flowering-stems have occasionally been pulled up in order to get the young bulbs attached to them for increasing the stock; but the main clump remains and sends up flowering-stems every season. No doubt many of the smaller bulbs are suppressed by the stronger ones, and it is well to relieve the congestion by pulling up the old stems and applying a liberal mulch which can hardly be too rich for this Lily's appetite. *Herbert Maxwell, Monreith.*

White Roses and Rain.—Concerning my recent remarks (*Gard. Chron.*, p. 149) on the sensitiveness of white Roses to damage by rain, an obvious explanation has since occurred to me. The discolorations of the petals caused by the wet are naturally more apparent in a white than a coloured Rose, on the principle that a white garment after the same amount of wear *appears* more soiled than a coloured one. Consequently it may be that white Roses as a whole are not really but only apparently more susceptible to damage by rain. The darker the Rose the less noticeable as a rule are the blemished outer petals; and such a bloom may be quite pleasing to behold, although a close examination may reveal that its outer petals are fully as much damaged as those of a white Rose which offends the eye. *J. P. Carlisle.*

Freesias.—The Rev. Joseph Jacob asks (on page 164), Has anyone tried planting out Freesias? I well remember seeing Freesias planted out on a narrow border adjoining one of the glasshouses at Englefield several years ago. If I remember rightly they flowered freely although of somewhat stunted growth. The variety was the well-known F. refracta alba. Whether the experiment was considered a success I am at the moment unable to state. Has anyone planted out Tuberoses during recent summers? I do not think they are now grown under glass in many private gardens but the dwarf double variety is a delightful subject for many decorative purposes, and its cultivation is not difficult. The bulbs should be potted in a mixture of loam, leaf-mould and sand, and the pots plunged over a bottom heat of sixty degrees or seventy degrees. As growth advances place the plants well up to the glass. *C. Ruse, Hyde Gardens, near Luton.*

Viburnum rhytidophyllum Fruiting.—Mr. G. Reuthe's recent exhibit of Viburnum rhytidophyllum in fruit has interested me because this plant does not seem to fruit well in this country. Last year one of three plants carried several bunches of fruit here. A freely fruited specimen would be a fine sight and it is most interesting to watch the colour of the fruit changing from green to pink, through red and purple to black. The plant that fruited here is on a bank sloping south, sheltered by other shrubs; the soil is very sandy, hot and dry. The other two plants were twenty-five yards away in rather richer soil facing west and partly shaded by other shrubs. Both these flowered but neither fruited. The seeds from the first plant were saved and sown in the open on March 29, 1924, and the first seedling appeared on September 3 so it apparently takes six months to germinate. The above particulars may be of use to other gardeners who think of planting this most uncommon-looking evergreen. *C. E. Bridgett, Red Roofs Lodge, Teddington.*

ROYAL HORTICULTURAL SOCIETY.

EXHIBITION AT HOLLAND PARK HALL.

September 23, 24 and 25.

THE Royal Horticultural Society's Autumn Exhibition, held in Holland Park Hall on the above dates, was a most successful one. The floor of the great hall was well filled with interesting exhibits, and a few groups were placed in the galleries. With these few exceptions the galleries were unoccupied, so that visitors were free to use them to sit in and to obtain a good view of the show as a whole. Although novelties were few in number and chiefly of the florists' flower type, the general exhibits were of a more comprehensive character than last year. The great underlying idea of the show is to afford an opportunity for the display of autumn flowers, foliage and berries, and other subjects suitable to the season; consequently there were splendid displays of early-flowering Chrysanthemums, Michaelmas Daisies, Kniphofias, Dahlias, Roses, Gladioli, and late border flowers. In addition to these, Carnations were much in evidence, while Liliums, Gloxinias, Palms, Orchids, Begonias, choice trees and shrubs, fruits and vegetables contributed to the effect and interest of the exhibition. The Hon. VICARY GIBBS (gr. Mr. E. Beckett) exhibited a wonderful group of superb vegetables, which, by general consent, was the finest exhibit on view. As our readers are aware, the competitive classes for fruits and vegetables were not included in the Holland Park schedule, as the next meeting at Vincent Square has been reserved for them.

There was little to cavil at with regard to the distribution and disposition of the exhibits, but we think more colour towards the centre of the hall would have been a great advantage. As it was, most of the colour was at the sides, close up to the gallery; consequently, when viewed from the end galleries the show presented a somewhat sombre effect, but viewed from the side galleries the effect was far brighter.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt., in the chair, and Messrs. Gurney Wilson (Hon. Sec.), A. McBean, T. Armstrong, H. Alexander, J. E. Shill, C. Cookson, C. J. Lucas, F. K. Sander, H. T. Pitt, C. H. Curtis, W. H. Hatcher, S. W. Flory, R. Thwaites, E. R. Ashton, J. C. Cowan, and Stuart H. Low.

AWARDS OF MERIT.

Laelio-Cattleya Marina, var. Milo (*C. Hardyana* × *L.-C. St. Gothard*). A giant-flowered variety with rosy, mauve-tinted sepals and petals and a grand lip, which has a deep orange throat and a broad, frilled ruby-purple apex. Shown by Messrs. STUART LOW AND CO.

Brasso-Cattleya Dietrichiana var. Lambeau (*Cattleya Fabia* × *Brasso-Laelia Mrs. J. Leemann*). A richly coloured Orchid with substantial sepals and petals of a deep purplish-rose colour; the broad, rounded lip has a central red-brown area heavily veined with deep gold; this is surrounded by deep purplish-rose. Shown by Messrs. STUART LOW AND CO.

GROUPS.

Messrs. SANDERS, St. Albans, contributed a handsome group of Orchids in which the background was composed of Oncidium varicosum Rogersii, associated with slender plants of Eucalyptus Globulus. Vandas were prominent and included fine examples of V. coerulea and V. luzonica. Brassia brachiata was well represented by a capital plant bearing a spike of five large, spidery flowers. Cattleyas and Laelio-Cattleyas occupied the larger part of the display and the former included C. Sylvia sanguinea, of fine rich colour; C. Hardyana Bruges Belle, with pure white sepals and petals; the white C. Lady Veitch, and the equally beautiful and chaste C. Freda Sander. Some of the best Laelio-Cattleyas were L.-C. Queen Marie, L.-C. lustrissima, and the handsome L.-C. J. Ansaldo var. atroviolacea. Other attractive Orchids in this group were Maxillaria venusta, Epidendrum vitellinum majus, Phalaenopsis Rimestadiana, Brasso-Cattleya Ilene and Cypripedium insigne Sanderae, with numerous botanical Orchids.

Messrs. CHARLESWORTH AND CO. had an attractive exhibit, wherein the specimens of Cattleya Venus, C. Sibyl, and Brasso-Laelio-Cattleya Lilian were conspicuous by reason of their orange or yellow colouring. Cattleya Luegae was finely shown as were Miltonia William Pitt, Cattleya Hardyana alba, Odontonia Olivia, Odontoglossum Clonius, Dendrobium Phalaenopsis and the quaint Paphinia cristata, Masdevallia melanopus, M. Chimaera bella—now rarely seen, and some excellent Cypripediums.

A handsome group of well-grown Orchids, every plant showing up distinctly over a ground work of green moss and Maidenhair ferns, was exhibited by Messrs. FLORY AND BLACK. Outstanding by reason of their yellow or copper colouring, were Cattleya Sibyl, C. President Wilson, C. Tagus (very fine), and L.-C. Vivid. Other equally beautiful subjects but of different colouring were Brasso-Cattleya Olympus, B.-C. Ruby, B.-C. Alderman, Laelio-Cattleya Prudence, and Cattleya Jasper. We very greatly admired the way in which Messrs. FLORY AND BLACK set up this exhibit.

Messrs. STUART LOW AND CO. exhibited a large group of Orchids and set the plants up to great advantage. Vanda coerulea was well shown and so were Cattleya Aeneus, Brasso-Laelio-Cattleya Thyone, Low's var., B.-L.-C. Blenheim Orange and Laelio-Cattleya Mrs. Medo, all of lovely yellow or coppery shades and eminently suitable for brightening a collection at this season of the year. Other fine things were Cattleya Hardyana, Laelio-Cattleya Profusion and Brasso-Cattleya Pallas and the two plants, to each of which an Award of Merit was granted. Odontiodas and Odontoglossums were included in the display, with several Angraecums, Coelogynes, Cypripediums and Oncidiums—altogether a fine exhibit.

Floral Committee.

Section A.—*Present*: Messrs. H. B. May (in the Chair), A. Turner, G. W. Leak, J. B. Riding, W. H. Page, W. Stephens, H. J. Jones, Hugh Dickson, E. R. Janes, Andrew Ireland, Donald Allan, D. B. Crane, Chas. E. Pearson, J. F. McLeod, W. B. Gingell, H. R. Darlington, W. Howe, M. C. Allwood and W. D. Cartwright (Sec.).

Section B.—*Present*: Messrs. G. W. Loder (in the Chair), W. J. Bean, G. Reuthe, G. Harrow, R. W. Trotter, C. G. Musgrave, Reginald Cory, G. Yeld, T. Hay, Amos Perry, F. G. Preston, W. G. Baker and W. B. Cranfield.

AWARDS OF MERIT.

Potentilla dahurica var. manchurica.—A charming little shrub of lowly growth and with its branches amply furnished with small, dark, greyish-green, five-lobed leaves. The flowers are freely produced and pure white, with a small central cluster of yellow stamens. Shown by Mr. AMOS PERRY, Enfield.

Potentilla Farreri var. prostrata.—A low growing, spreading shrub, bearing bright golden-yellow flowers over an abundance of small, rich green leaves. Shown by Mr. AMOS PERRY.

Polystichum angulare divisilobum nitescens grande.—A beautiful variety, with wide-spreading, yard-long fronds of a deep green hue. The specimen shown was a finely-grown and very elegant one. Shown by Mr. AMOS PERRY.

Pyrus pinnatifida.—A handsome shrub when in fruit as it bears large, terminal clusters of red, oval berries, which have a highly-polished appearance, and are very effective. Shown by Major G. CODRINGTON, Sands Court, Chipping Sudbury.

Aster Royal Blue.—An effective double-flowered variety of quite rich blue colouring. Shown by Mr. E. BALLARD, Colwall.

Aster Maid of Athens.—Another double variety that should prove useful by reason of its light mauve-blue colouring. Shown by Mr. E. BALLARD.

Chrysanthemum Kathleen Wells.—An extremely useful, early-flowering, pure white variety, with broad florets which incurve slightly at the tips. Shown by Messrs. W. WELLS AND CO., Merstham.

Eustoma Russelliana var. The Oxford.—This is a very handsome variety with flowers of a rich violet-blue colour and velvety texture. Shown by Mr. C. J. ELLIS, Weston-super-Mare.

Chrysanthemum Silver Queen.—A large, early-flowering variety with reflexing flowers, except in the centre, where they incurve. The colour is soft rose with silvery reverse. Shown by Mr. H. WOOLMAN, Shirley, Birmingham.

Chrysanthemum Illuminator.—This variety has large but somewhat thin flowers of a pleasing shade of terra-cotta, heavily suffused with pink; dull bronzy yellow reverse. Shown by Mr. H. WOOLMAN.

Chrysanthemum Brilliancy.—A very attractive early-flowering variety of rich, bright bronze colouring with the yellow reverse showing on the inner florets. Shown by Mr. H. WOOLMAN.

Chrysanthemum Salmon Profusion.—A light and bright salmon-coloured variety, evidently a sport from Pink Profusion. We understand it appeared with Messrs. Batchelors of Knaresborough. Shown by Mr. W. YANDELL, Maidenhead.

Aster Thora Perry.—A double variety with the flowers of a pale lavender-pink colour. Shown by Mr. AMOS PERRY.

Chrysanthemum Cissbury Yellow.—A loosely incurving and fairly large, early-flowering variety of deep golden yellow colour. In shape and colour it comes very near to Knaresborough Yellow and Mrs. Hamilton. Shown by Mr. S. AISH, Dunstable.

Gladiolus Nora Toomer.—This bold, large flowered variety has flowers of a bright salmon colour with red-brown flushing on the inner surface of the lower segment. Shown by the Orpington Nurseries, Orpington.

Chrysanthemum Lichfield Peach.—A dainty and pleasing variety with flowers of fair size and much grace. The florets are narrow and slightly twisted at the apex. The colour is softest peach pink. Shown by Mr. A. W. Thorpe, Lichfield.

CARNATIONS.

Mr. C. Engelmann had a very choice collection of Carnations, numbering between seventy and eighty varieties, which were staged with taste and were of very fine quality. Of the newer introductions were Red Laddie, a deep rose variety and a sport from Laddie; Winsome, rich rose-pink; Eldora, a fancy variety with white ground pencilled with scarlet; Lassie, deep cerise with fimbriated petals; Brigand, a well-formed flower of deep cerise colour; Laddie, salmon-pink; Saffron, yellow, and its sport, Cream Saffron; White Enchantress and Enchantress Super-Supreme, salmon-pink, of a richer tone than the type.

Messrs. Allwood Bros. staged a very imposing group of Carnations, the central feature being a very large mass of Wivelsfield Apricot of rich orange-apricot colour. Other choice varieties, which were staged in epergnes and ornamental vases were Coral Glow, bright apricot-red; Edward Allwood, scarlet; Topsy, crimson; Maine Sunshine, yellow; Wivelsfield Fancy, of pretty rose colour flaked with deep rose; White Pearl and Laddie. Close by, the same firm also arranged a small formal garden planted with Dianthus Allwoodii varieties, above which were raised ornamental vases filled with hardy, perpetual-border Carnations, including Sussex Avondale, deep salmon; Sussex Beauty, heliotrope; Sussex Rosalind, a yellow fancy; Sussex Purple and the new Sussex Sunset, of deep cerise colour.

In conjunction with their display of greenhouse plants, Messrs. Stuart Low and Co. staged Carnations in excellent form, and the salmon-pink Eileen Low was of outstanding merit. This variety, the flowers of which are of large size, has figured conspicuously in this firm's groups throughout the year. Suzan Pam, rich cerise; Topsy; Lady Inverforth, salmon-pink; Arnos Grove, heliotrope; White Pearl, and Saffron were other meritorious varieties exhibited.

HARDY FLOWERS.

The groups of hardy flowers were numerous and generally of high quality. Michaelmas Daisies figured in many of the groups and some exhibits were confined solely to this autumn subject. Mr. Amos Perry had a miscellaneous exhibit arranged on the floor and banked high towards the centre which was devoted to the huge Helianthus Monarch. Michaelmas Daisies of which there were many varieties, included King of the Belgians, an immense lavender-blue flower; Maggie Perry, a large semi-double variety of soft mauve colour and Ethel Ballard, soft lilac-pink, while Kniphotia Uvaria maxima, of rich orange-scarlet colour; Liastris pycnostachya, with long spikes of rose-purple flowers; Aster Linosyris, yellow; Lilium auratum, Gaura Lindheimeri, a splendid border plant for September, and Chelone glabra alba, were a few of the many good things shown in the group. Mr. F. G. Wood staged a comprehensive display, one end of the group being devoted to general hardy plants, amongst which were the yellow Solidago missouriense, Salvia Greigii, rose-cerise, Pentstemon Kellermannii, violet-purple, and a magnificent spray of Romneya Coulteri. Michaelmas Daisies, of which Florrie, Little Boy Blue, and Snowdrift, were a selection, together with Heleniums and other border plants, occupied another part of the exhibit.

Michaelmas Daisies were shown in admirable style by Messrs. H. J. Jones, Ltd. who staged the flowers in solid masses of colour. The background was arranged with tall broad colums of Snowdrift, a new semi-double white variety; Pink Perfection, rose-pink; Violet, bright violet-blue; Maggie Perry, a large mauve flower; Charm, pink; and Queen of Colwall, a magnificent variety with curved and twisted florets of pale mauve colour. In the front of the exhibit were masses of Little Boy Blue, Florrie, a vimineus variety with lilac flowers; Starlight, lilac-mauve; Decorator, belonging to the ericoides section and possessing white flowers, and Elsa, a huge double flower of a pretty shade of rosy-blue. Vases of the yellow Helianthus Monarch were judiciously set amongst the flowers to break the colours.

Messrs. Bakers, Ltd., had a very noteworthy group of herbaceous plants, Michaelmas Daisies forming the chief feature. Included among the many varieties of these were Grey Lady, a large semi-double variety with opal-grey flowers; King George, belonging to the Amellus section with extra large bluish-violet flowers; Lady Lloyd, soft pink; Mons, rose-pink; and acris, mauve. Gladioli were represented by both the Primulinus and large-flowered sections and of the latter class were War, blood-red; Red Emperor, an extra large red flower; Nora, light blue; and Master Wietse, dark violet shaded purple. Kniphofias, Lupins, Delphiniums, Phloxes, and Liliums were also staged in this very pleasing exhibit. Close by, Messrs. G. Gibson and Co. attractively displayed a collection of hardy flowers consisting chiefly of Heleniums, Riverton Gem and Riverton Beauty; Kniphofia Mount Etna, orange-scarlet; Aconitum Wilsonii, Lilium tigrinum magnificum, and Phloxes, Michaelmas Daisies and Gladioli in variety. In the display staged by Messrs. J. Cheal and Sons, Ltd., were the graceful Thalictrum dipterocarpum, Phloxes Maréchal Foch, rose-cerise and Elizabeth Campbell, salmon-pink; Helianthus sparsifolius, one of the best autumn-garden subjects, and H. orygalis, the Willow Sunflower; Aconitum Fischeri, and Michaelmas Daisies in quantity.

Mr. T. Carlile made a feature of Delphiniums Nora Ferguson, pale blue, blended with rose-mauve; Lord Derby, rich violet-blue; and Lavanda, rose-lavender. He also showed Kniphofias, of which Royal Standard and K. aloides erecta were very fine, while Michaelmas Daisies were represented by Queen Mary, blue; Madame Ganguin, pink and Miss Eisile, lavender-blue, and Phloxes by Mia Ruys, a very dwarf, white variety; Lofna, soft mauve; and Mrs. Milly Van Hoboken, with extra large, soft pink flowers.

A magnificent collection of herbaceous plants was staged by Messrs. G. Jackman and Sons, the flowers being grouped around a central display of Clematis. Hardy border Chrysanthemums were shown in great variety, as also were Michaelmas Daisies. Of the latter were large masses of Woking White, Anita Ballard, Cornflower-blue; Ethel Ballard, pink; Mons, reddish purple; Little Boy Blue, King George, and Rudolph Goethe, one of the finest of the Amellus section, with large lavender-blue flowers. Delphiniums, Heleniums, Pentstemons, and Rudbeckias were also included in great variety in this charming group.

Mr. W Wells, Junr., made a feature of Michaelmas Daisies and Snowdrift, Dick Ballard, a double rose-pink variety; Ethel Ballard, Queen of the Lilacs, Robinson V.C., bluish mauve; and Little Boy Blue were a few of the choicest varieties. Phloxes, Delphiniums and Lupins occupied positions towards the front of the exhibit. Helenium autumnale rubrum, H. Riverton Gem, together with Michaelmas Daisies and Phloxes were staged by Messrs. Rich and Co.; the Phloxes included Etna, coral-red; Maréchal Foch, cerise; Evelyn, salmon-pink; and Josephine Gerbeaux, pale pink with rose centre.

In the display staged by the Chalk Hills Nursery were Michaelmas Daisies, Perry's White, Enchantress, Maggie Perry, Queen Mary and Amellus bessarabicus; Helenium autumnale rubrum, Astrantia major, Gaillardias, Phloxes, and Scabiosa caucasica. Messrs. Reamsbottom and Co. showed their delightful strain of St. Brigid Anemones in many pleasing shades of colour and Mr. W. Yandall staged excellent Violas of which Primrose Dame, light yellow; W. H. Woodgate, lavender-blue; Klondyke, deep yellow; Malcolm Millar, pale yellow, edged with grey-blue; and Queen of the Whites were a selection. Messrs. Isaac House and Son showed a number of varieties of Scabiosa causcasica, amongst which were White Queen, Harold, deep blue; Mrs. Isaac House, a fine white flower; Dorothy Gwyer, lavender blue; Annie, light blue, and the South African form of S. Columbaria rosea, with large rose-coloured flowers. At one end of the group large spikes of the hybrid Kniphofia Mount Etna, with uniformly coloured trusses of orange-vermilion, were also displayed. Delphiniums of exceptional quality were shown by Messrs. Blackmore and Langdon, some of the best varieties being Lavanda, lavender-purple; George Cochrane, deep blue and purple; Mrs. Townley Parker, light blue; Queen of Bath, sky-blue with dark centre; Lord Derby, purple-blue; Harry Smetham, a semi-double flower of deep blue colour, and The Shah, mauve and blue, the individual flowers being extra large. Mr. George G. Whitelegg showed Michaelmas Daisies in profusion and the varieties Mons, King George, Nancy Ballard and Dainty were outstandingly good. The exhibit was bordered with a collection of Alpines growing in pots.

Messrs. Dickson and Robinson had a very charming arrangement of Dahlias, Chrysanthemums and Michaelmas Daisies, and included in the last-named were Rachel Ballard, rose; King George, Walkden's Pink, Snowdrift, Purple Emperor, rich purple; and Lavender amongst the Amellus and Novi-Belgii sections, and Ideal, Rosy and Chivilary were representatives of the ericoides and vimineus groups. Mr. Ernest Ballard exhibited Michaelmas Daisies in fine form, the varieties Countess, rose-lilac; Grey Lady, greyish-blue; Queen of Colwall, pale mauve; Snowdrift and Queen Elizabeth, two good white varieties; Maid of Athens, rose, and Royal Blue, deep blue, being particularly outstanding.

Messrs. B. Ladhams, Ltd., made a feature of named varieties of hybrid Lobelias in purple, cerise, crimson and scarlet shades of colour, and they also showed the new Coreopsis auriculata superba in excellent condition. Phloxes were exhibited by Messrs. John Forbes (Hawick) Ltd., and Marvel, purplish-blue; General French, pink; Frau Ant. Buchner, white; Iris, bluish-violet, and Rijnstroom, pink, were all shown in fine form The same firm also showed hybrid Pentstemons in pleasing colours and Castle Forbes, a fine bedding variety of scarlet colour and white throat, Leon Delagrange, rose-pink; and F. A. Stuart, purple, were a few of the best.

Messrs. R. W. Wallace and Co. staged a very effective floor group of herbaceous plants and a very pleasing colour combination was obtained by massing Galtonia candicans with Kniphofia Uvaria grandiflora. Liliums were also prominently employed throughout the group, and included L. speciosum, L. s. album, L. s. rubrum, and excellent specimens of L. auratum and L. longiflorum giganteum. Gladioli and Michaelmas Daisies were also freely employed and touches of green were supplied by specimens of Conifers, Bamboos, and Pittosporums arranged amongst the flowers.

Of the many varieties of Michaelmas Daisies staged in the group of Messrs. Wm. M. Cutbush and Co., Lavenda, Little Boy Blue, Ethel Ballard, Queen of Colwall, King George, and Snowdrift were all seen in excellent form and were well associated with vases and bowls of Dahlias. Messrs. Godfrey and Son staged Dahlias, Chrysanthemums, Michaelmas Daisies and other border flowers in good condition, and Mr. J. J. Kettle and Mr. B. Pinney both exhibited Violets.

The Central Garden Supplies showed Roses in conjunction with herbaceous plants, the foreground of the group being occupied with alpine subjects.

The French Intensive Gardens had a superb display of everlasting flowers and dried grasses. The former included Helipterum Manglesii, Polycalymma Stuartii, Acrolinium roseum, Gnaphalium margaritaceum, Echinops Ritro, Rhodanthe maculata, and Helichrysum lanatum, while amongst the grasses were Lagurus ovatus, Hordeum jubatum, Avena sterilis, and Bromus brizaeformis.

The only display of Antirrhinums was shown by Messrs. W. H. Simpson and Sons who staged the flowers with good effect in round baskets. Appleby Matthews, orange terra-cotta; The Fawn, apricot pink; Rose King, rose; Climax, apricot and old gold; Purple Robe, bright purple; Gloria, pink; Fascination, rose-pink; Eclipse, crimson; and Queen Victoria, white, were admirable varieties.

Mr. H. Hemsley had a bright display of hardy flowers and shrubs, Dahlias, Michaelmas Daisies, Heleniums, and Phloxes being exceptionally prominent. Of rarer shrubs were Enonymus latifolius, Cornus Nuttallii, and the variegated Prunus Pissardii Hessei.

Mr. James Macdonald made one of his delightful "Grass Gardens." The seedling lawn grass was perfect in its smooth greenness and freedom from weeds. In the centre he had a sundial surrounded by small beds of dwarf Heather and Berberis. At the four corners there were beds of tall ornamental grasses, Eulalia gracillima, E. japonica variegata, and the dwarfer Hordeum jubatum, Eragrostis, Glyceria, and Phleum aurea, bordered with the neat growing Holcus mollis.

Gladioli.

There were a few exhibits confined solely to this flower, and the display from Messrs. Dobbie and Co. evoked the admiration of all. Never before do we remember seeing such perfect and noble spikes, with flowers of exceptional substance, clean, and very pure in colour. They are a pedigree strain raised by Mr. Mair, a well-known raiser, and of few varieties which were named included Spitfire, a mammoth spike nearly thirty inches in length, carrying seventeen perfect orange-scarlet blooms; Duchess of York, a unique shade of heliotrope and apricot; Kyle, rose-lilac; and David Airdrie, rose-purple and white.

Another Scotch exhibit of Gladioli was artistically staged by Messrs. Austin and McAslan, who employed baskets, ornamental vases, and epergnes for displaying the flowers. Of the G. primulinus section were Rose Luisante, deep rose-pink shaded white; Alice Tiplady, orange-saffron; Hermione, orange, shaded salmon; Golden Drop, with beautiful large drooping flowers of golden-yellow colour; and Scarletta, scarlet. Large-flowered varieties, included L'Immaculée, pure white; Herada, pure mauve; Professor Treub, salmon-pink; My Favourite, dark mauve; Schwaben, light yellow; Glory of Nordwijk, cream; and Violet Wonder.

In the display shown by Messrs. R. H. Bath, Ltd., Alice Tiplady, Hermione, Orange Queen, Walter Bloem, Souvenir, Attalie, Topaz and La Lys were outstandingly fine among the many Primulinus varieties; while of large-flowered sorts there were Chris, crimson; Nora, light blue; Red Emperor, Pink Perfection, White Emblem; and Bleriot, apricot-rose with orange throat.

Messrs. Lowe and Gibson staged a number of good seedlings and The Orpington Nursery Company exhibited a small group in which Souvenir, yellow; Orange Brilliant, Maréchal Foch, White Giant, Mrs. Grullemans and Glory of Nordwijk were very fine. Mr Alfred Edwards had a dainty group of Gladioli, rich in Primulinus varieties, and of these, Souvenir, deep yellow; Topsy, orange-apricot; La Saviere, rich salmon-orange; and Dixmude, white, were of very high quality.

Dahlias.

Messrs. W. Cutbush and Son employed Dahlias and Michaelmas Daisies in their picturesque floor group, the flowers being arranged in vases and bowls set on pedestals at different levels. Decorative varieties were chiefly used and of these a good selection was Salomonea, salmon; Polar Bear, white; Porthos, violet-blue; King Harold, maroon; M. Dresselhuys, rose-pink; Sulphurea yellow; and John Mensing, scarlet.

Messrs. D. Prior and Sons had a small group of Dahlias representing the various sections. The varieties Nora Bell, a small Paeony-flowered variety similar in colour to the Madame Herriot Rose was exceptionally good as were also Rosella Amos, yellow shaded old gold; Chrissine, bright rose-pink; Helene Margerison, rose; Golden Queen, rich yellow; and Mammoth, a fine incurved Cactus variety of purplish-crimson colour relieved with a lighter-toned near the edges of the florets.

Mr. J. T. West had a very bright display of Dahlias, and made a feature of the miniature-Pæony flowered variety, Pink Pearl, of rich rose-pink colour. Other outstanding varieties were Rookwood, rose-lilac; Snow Bunting, white; Primrose, sulphur-yellow; and The Prince, scarlet; all fine decorative varieties.

In the display from Mr. Charles Turner were Sulphurea, yellow; Porthos, heliotrope; Fireflame, rich scarlet, and Mrs. Carl Salbach, amongst decorative varieties; and Trixie, Lovely, Nora Bell, and Anita were a few of the best of the miniature Pæony-flowered section.

Mrs. Krelage (white Cactus), Mr. H. C. Dresselhuys (pale pink decorative), Reve d'Amour (rose-pink flushed with salmon), Jhr. G. T. Van Tets (white Decorative), Abbotsford (salmon-rose Cactus), and Fireflame (scarlet Decorative), were a few of the best flowers shown by Messrs. W. Treseder, Ltd.

Messrs. Dobbie and Co. showed a comprehensive display consisting chiefly of Collerette varieties, the flowers were of large size and a few of the outstanding varieties were Glengarry, rose and yellow; Mountaineer, a charming pure white flower; Glencoe, scarlet; Greenpark, yellow; Arran, violet-purple and white and Goldendale, amber-yellow. Reginald Cory, a small Decorative variety with scarlet florets tipped with white; Little Jim, a crimson Pompon variety; Loch Lomond, a lavender Decorative, and Amos Perry, a Cactus variety of rich terra-cotta were other beautiful sorts in this charmingly arranged exhibit.

Messrs. J. Cheal and Sons, Ltd., staged a group of Dahlias, chief of which were the single Crawley Beauty, deep crimson; Scarlet Queen, a bright Cactus variety; Réne and Aphrodite, two good Paeony-flowered sorts; White Star, and the Collerette varieties Cavil, maroon and white; and O. M. Courage, rose-maroon and white. A noteworthy group of Dahlias was staged by Messrs. Carter Page and Co., representing the various sections. Delice, pink; Fireman, scarlet; Jhr. G. T. Van Tets, white, and Orange Boven, orange were four high quality Decorative varieties of large size, while amongst the Paeony-flowered section were Alma, white; Clothilde, bright yellow; Dazzle, scarlet, and Fairy, apricot and white. Of Cactus varieties there were R. Frohsin, rose; Masterpiece, mauve; and Mrs. C. A. Gillatt, pink with yellow centre.

Messrs. H. J. Jones, Ltd., had a highly creditable exhibit of Dahlias, the flowers being arranged with great skill, and mixed with feathery spikes of Michaelmas Daisies. There were some very pretty colour combinations and effective groupings were those of Glory of Aalsmeer, white, with the pink Mary Capham; Mevrouu Ballego, orange-scarlet with Sir Ernest Shackleton scarlet; Extase, pink and yellow, with King Harold, maroon; Prince of Wales, salmon and Glory of Stanhauis, buff; and Orange Boven, orange, with Aglaia, apricot and mauve.

Mr. J. B. Riding staged Dahlias of very fine quality and in the collection were noted Noble, orange terra-cotta; Jhr. G. T. Van Tets, white; Ida Warner, rose; Rev. J. Robinson, lavender-lilac; Ruby, claret red; Augustinus, old rose suffused with amber; Testout, pink; Faith, sulphur-yellow; and Yellow Perfection, deep yellow. Messrs. J. Stredwick and Son had a group of Dahlias representing many of this year's novelties, including the large-flowered Mabel Lawrence, scarlet; Princess Louise, white; Sheila Ward, yellow, tipped with silvery-white; Berengaria, old gold; and Kitty Rogers, faint blush.

Trees and Shrubs.

Some exceedingly interesting collections of hardy trees and shrubs were arranged in various parts of the hall. Messrs. J. Cheal and Sons had two groups in which the autumn colours of various Maples, Oaks, Azaleas and others gave welcome touches of vivid autumnal colour. Acer rubrum fulgens and Spiraea ruberrima were particularly prominent. Other desirable shrubs included a well-grown standard Enonymus Silver Queen, Berberis dictophylla, an uncommon species in which the Sage-green on the upper surfaces of the leaves contrasts almost startlingly with the silverness below. Messrs. Cheal and Sons also had some good Berberis seedlings, mostly bearing plenty of highly coloured berries. Ligustrum Quihoui bore long sprays of whitish flowers, while the quite distinct L. coriaceum is valuable for its neat compact habit and shining leathery leaves. Long sprays of Buddleia variabilis magnifica also attracted attention.

A number of shapely little Conifers filled the centre of a collection arranged by Messrs. R. and G. Cuthbert. These included such Thuyas as T. nana, T. Wareana, and T. occidentalis Ellwangeriana Reingold—of rich yellow colour. Retinospora plumosa aurea was also present in attractive colouring. At the angles of the group Messrs. Cuthbert had effectively arranged Lilium lancifolium and L. tigrinum, with the vivid foliage of such deciduous Azaleas as A. Enchantress, several mollis-sinensis hybrids and A. occidentalis.

A particularly well-grown specimen weeping-standard of Ilex aquifolium argentea pendula well-filled the centre of a group arranged by Messrs. Waterer, Son, and Crisp, Ltd. Well-grown Hollies were a good feature of this exhibit, and they included excellent specimens of Silver Queen, Ilex balearica, heavily fruited; I Wilsonii, bearing large, dark green, shining leaves; I. Watereri, of compact habit; and the small-leaved I. Perneyi, which has comparatively large, red berries. Colour was added by the heavily-fruited bushes of Berberis Wilsonae and Pernettya mucronata.

Many splendid, shapely young Conifers were nicely arranged by Messrs. Fletcher Bros. The examples of their column-like Cupressus Lawsoniana Fletcheri were admirable specimens, as also were those of Abies concolor violacea, Retinospora obtusa nana aurea and R. obtusa Crippsii, two splendidly coloured bushes. The addition of profusely berried little shrubs of the Fire Thorn gave appreciable brightness to the exhibit. The rich, luxuriant foliage of a number of Rhododendrons of R. Falconeri type were prominent in the collection of Mr. G. Reuthe. These included R. Elisa, R. Elisabethae, R. fictolacteum, and R. grande. A number of well-flowered sprays of Lapageria rosea also attracted attention.

A very complete collection of the newer Chinese Conifers, Barberries and Cotoneasters, was contributed by Messrs. Hillier and Sons. Of the Conifers the many specimens of Silver Firs and Spruces were particularly valuable. Abies recurvata is quite distinct in that its sharply-pointed leaves incline backwards. A well grown specimen of Picea Omorika bore several cones. Amongst the many interesting deciduous subjects on show we noted Viburnum Henryi bearing its vivid scarlet fruits, Fothergilla major of intense autumn colour, the true Acer rubrum, and a box of seedlings of Quercus ambigua, only a few inches or so high, but bearing handsome, well-coloured leaves. But the most handsome foliage of all was that of Populus lasiocarpa, of which there were several admirable plants. Other rare and interesting subjects included the Himalayan Arundinaria Hookeriana, quite distinct from A. sinensis, and of elegant beauty.

Mr. R. C. Notcutt had a very interesting group of the less common hardy shrubs. There were several good varieties of Hibiscus syriacus, many flowering stems of Romneya Coulteri, Enkianthus campanulatus, Buddleia Fallowianum, Hydrangea paniculata grandiflora of unusually large size, Teucrium fruticans and Colutea cruenta.

Grey foliaged species were prominently shown by Messrs. A. Charlton and Sons, and these included Anthyllis Barba-Jovis, Corokea cruenta and Senecio Grayi. Acanthopanax pentaphylla variegata and Eriobotrya japonica were also shown well. Topiary specimens in Box were shown by Mr. Klinkert, while Messrs. Robert Green, Ltd. had trained Bays in an alcove.

Clematis.

The centre of a large miscellaneous group admirably arranged by Messrs. G. Jackman and Son was filled with a valuable collection of Clematis in full flower. The chief varieties were the ever-popular Nelly Moser, Lady Northcliffe, azure blue; Crimson King, of intense colour; Comtesse de Bouchard, rosy lavender; Lady Betty Balfour, dark blue; and Fairy Queen, white with lilac bar.

Messrs. L. R. Russell, Ltd., associated a good collection of Clematis with Vitises and Maples with autumn colouring, various Bamboos, and Cestrum elegans. Chief amongst the Clematis was a batch of Crimson King bearing many large flowers of delightful colouring. The smaller and rather darker Ville de Lyon, Jackmanii superba, Edouard Desfousse, silvery blue; Daniel Durondeau, dark blue; Marie Boisselet, white with a lavendar bar; and Mrs. Cholmondeley, of lavender colouring, are the names of a selection of the many varieties on show.

Roses.

In point of quantity, freshness and good colouring the many collections of Roses were equal to those at the recent autumn show of the National Rose Society. The majority of the Rose exhibits were arranged on tabling along the Holland Avenue side of the hall, but there were others in various positions where they added variety and, often needed colour, to the advantage of the general effect of the show.

Mr. Elisha J. Hicks had a couple of pillars of the comparatively new variety Betty Uprichard in warm glowing colour. This charming sort was so freely shown and in such good quality as to be almost the Rose of the show. Joanna Bridge occupied two other pillars and Mr. Hicks used Lady Hillingdon to good effect on a large arch. Columbia, Golden Emblem and the rich, fragrant Hoosier Beauty were also of more than average merit in this fine collection. Masses of their new varieties Eva Eakins and the pink and gold Mrs. Talbot O'Farrell were prominently placed by Messrs. S. McGredy and Son. Ethel James, a large single of golden ground colour, heavily stippled with rose pink on the outer half of the bloom, is another charming variety. Wm. F. Dreer and the golden Mabel Morse were also very good.

Mrs. C. G. Salmon, a large soft pink coloured single Rose was included in their collection by Messrs. B. R Cant and Sons. Rosalind, a flattish, pale blush cluster variety with good sprays on which the buds are deep pink is another good novelty. Amongst the many H.T. varieties we were particularly attracted by Mme. Antoine Marie, of delicately beautiful colour. Alice Amos, which may be termed a glorified wild Rose, attracted attention amongst the many good sorts shown by Messrs. D. Prior and Son. K. Poulsen, a vivid scarlet cluster variety was also noted. The standard H.T. sorts included fine vases of La Tosca, General McArthur, Los Angeles and Mrs. Henry Stevens.

The colour arrangement was equally good in the display of Mr. John Mattock who utilised Golden Ophelia, Mrs. Henry Bowles, Ophelia, Isobel, and Madame Antoine Marie and very many other desirable sorts to good effect. A number of varieties of his own raising were displayed by the Rev. J. H. Pemberton. The principal were Vanity, Nur Mahal, Ruth, Cornelia, Pax and Mary Monro. Besides these this large group contained a selection of other valuable varieties.

Prominent in their collection Messrs. Chaplin Bros. placed a large basket of the dwarf polyantha Coral Cluster. Orleans was another valuable free-flowering dwarf variety on view. Wm. Bowyer, a new velvety crimson H.T. appeared to be of more than average merit. Westfield Star, Mrs. Tresham Gilbey, pale salmon-pink, are other good sorts that were included,

Amongst the many desirable varieties so well staged by Messrs. F. Cant and Co. one of the most prominent was Henry Nevard, which was probably the largest bloom in the show. It is well formed and of dark crimson colour. Betty Uprichard, Hugh Dickson, Padre and Red Cross, were also nicely staged.

Large stands of K. of K., Ophelia, Red Letter Day and Covent Garden were arranged by Messrs. Waterer, Sons and Crisp. The Central Garden Supplies included a good selection of standard varieties.

A highly attractive display was made by Mr. George Prince. His arches of Roses, particularly those of K. of K. were exceedingly effective. Then there were charming baskets of Golden Emblem, Betty Uprichard, Covent Garden, Ophelia and La Tosca. Besides these there were many other varieties of value. Messrs. A. J. and C. Allen gave especial prominence to massed blooms of Emma Wright which made a beautiful display. Severine, Golden Emblem, The Queen Alexandra Rose and Madame Butterfly are the names of only a few of the many other sorts on view.

Nellie Parker, Ophelia and Mrs. Ambrose Riccardo, three very attractive blush-pink Roses were especially well shown by Mr. Henry Drew who had a large collection of up-to-date varieties. As in many other collections Betty Uprichard was shown in quantity and of high quality. Mr. T. P. Edwards showed the American-raised variety W. F. Dreer in excellent condition. He also showed the dark crimson, fragrant Etoile de Hollande, Madame Butterfly and Ruth.

A large and effective display was made by Mr. Thos. Robinson. His chief varieties were K. of K. in a large basket of goodly proportions, Etoile de Hollande, Col. Oswald Fitzgerald and the rich orange-coloured Mrs. Redford. Their new climbing polyantha variety Phyllis Bide which recently won the Corry Cup, was shown by Messrs. S. Bide and Sons.

A neat collection of such Roses as Sunstar, Independence Day and Los Angeles was made by Messrs. A. Warner and Son.

Stove and Greenhouse Plants.

A large circular stand of Gloxinias arranged by Messrs. Sutton and Sons was one of the central features of the show. A cone shaped centre, of mixed varieties, surmounted by a graceful Palm was the "hub" from which radiated alternate high and low segments containing distinct varieties. Altogether some 700 excellent plants were used. These displayed the high culture associated with the Reading house. The chief varieties were Duchess of York, blue edged with white; Duke of York, red, edged with white; Azure Blue, white throat; Her Majesty, white; Monarch, rosy amaranth; Meteor, dazzling scarlet with white throat; Royal Crimson, Pink Beauty, white throat; Fire Fly, scarlet, white throat; and King George, scarlet self.

An interesting collection, largely of new Holland plants was arranged by Messrs. Stuart Low and Co. It also contained Haemanthus puniceus, Mutisia decurrens and the lovely, blue-flowered Eustoma Russelliana.

Messrs. Blackmore and Langdon had one of their excellent groups of double-flowered tuberous Begonias; Lady Cory, pale orange; Lord Lambourne, a deeper shade; John Mercer, orange-scarlet; Grand Monarch, deep crimson, and General Joffre, fiery red, are the names of only a few of the magnificent sorts they staged.

A large quantity of well-grown Liliums filled the circular space allotted to Messrs. J. Carter and Co. In the centre they had many plants of Lilium lancifolium Melpomene; these gave to L. l. magnificum bordered with Browallia speciosa major and Ferns. At intervals specimens of Lilium auratum, and an occasional Palm, gave the necessary relief to the general level of the other plants.

An imposing and graceful group of Palms was contributed by Messrs. Robert Green, Ltd. In the centre there were tall specimens of Kentia Dumoniana, and the species included Cocos australis, Phoenix Roebelinii, Chamaerops hystrix and Arenga saccharifera.

Interesting collections of succulent plants were staged by Miss S. S. Thompson and Mr. S. Smith. These were mostly of small specimens of various Mammillarias, Echinocereus, Opuntias, Ariocorpus, Euphorbias, Cotyledons and Crassula filiata.

Mr. R. J. Case showed trusses of excellent zonal Pelargoniums, both single and double flowered varieties. The pips were large and brightly coloured, of a quality fully equal to those of bygone days when these showy flowers were to be found in almost every greenhouse in the country.

Chrysanthemums.

The groups of Chrysanthemums were confined to the hardy early-flowering varieties and these were shown both in the disbudded state and in spray form. Messrs. Keith Luxford & Co. had a very large and tastefully arranged collection, which included splendid blooms of Uxbridge Pink, Bronze Cranfordia, Almirante and Lichfield Pink, with vases of graceful sprays of Verona, Mary Mason, Red Anemone and Horace Martin.

Mr. Wm. Yandell included a large vase of his new Salmon Profusion which was exceedingly decorative. Lichfield Purple, Crimson Pride and La Pactole of the disbudded varieties, La Garonne, Golden Gleam, Dick Barnes and Shrapnell, in sprays, are a good selection of his excellent sorts.

Both types of flower were also finely shown by Messrs. Wm. Wells and Co. Their large blooms were of Kathleen Wells, white; Eden, mauve tipped with gold and the Golden Harvester. Chief amongst the spray varieties were Phoenix, Nordmandie, Bronze Normandie, Goacher's Crimson, Redwings and September Gem.

Alpine Plants.

Messrs. Gavin Jones and Ingwerson staged a very interesting group of Alpines in pots, Solidago brachystachys, Satureia montana ilyrica, Potentilla fruticosa manschurica, P. aurea, Ononis natrix, Campanula Tymonsii, and Erigeron Villarsii being all shown in flower. Among shrubs were Arctostaphyllos myrtifolius, Salix retusa and dwarf Cupressus, Junipers and Pines.

Mr. Clarence Elliott made a charming rock-garden on a table and employed large drifts of the pale blue Gentiana Farreri and

G. sino-onata, a Chinese species with rich blue flowers. There were also masses of Colchicum speciosa. Juniperus hibernica compressa, an unidentified species of Juniperus known as The Coffin Juniper, collected by Farrer on his last expedition to China; Pinus sylvestris globosa and Pinus Cembra aurea. The pretty, pink-flowered Buddleia nanhoense was also shown; it is similar in habit to B. variabilis but reaches a height of only two to three feet and is useful for small gardens.

Messrs. Maxwell and Beale had a rock-garden exhibit planted with Erica vagans St. Keverne and the deeper flowered form E. v. Mrs. D. F. Maxwell. Gentiana Farreri, G. lagodecheana, G. sino-ornata, Potentilla Gibson's Scarlet and Gazania splendens were other subjects in flower. The same firm also planted a small Heath-garden on a low level and Erica stricta, E. cinerea pallida, E. vulgaris Serlei, E. vagans carnea, and E. ciliaris alba were noteworthy among the many species and varieties employed.

Messrs. Bowell and Skarrett showed miscellaneous hardy flowers and alpines, and among the latter was the rarely seen Kirengeshoma palmata, a Japanese plant with drooping, creamy-yellow flowers and handsome palmate leaves. Hieracium aurantiacum, Veronica cupressoides and Crocus speciosus were also shown in good masses.

Messrs. W. H. Rogers and Son, Ltd., exhibited a very good strain of Meconopsis aurantiaca flore pleno in deep orange and yellow colours, while Sempervivums and Saxifragas were shown in variety together with Chrysogonum virginianum, Gentiana Farreri, Verbena venosa and dwarf forms of Cupressus obtusa.

Fruit and Vegetable Committee.

Present: Messrs. H. S. Rivers (in the Chair), P. C. M. Veitch, J. Bates, J. Harrison, Edwin Beckett, W. H. Divers, Arthur Bullock, H. Prince, E. Laxton, Fred. G. Treseder, S. B. Dicks, W. F. Giles, J. Allgrove, A. C. Smith, G. Woodward, J. Wilson and E. Neal.

Award of Merit.

Grape Cote House Seedling.—On the 9th inst. this new variety was shown before the Fruit and Vegetable Committee and a deputation was instructed to inspect the vines as to their cropping capacity, etc. A favourable report was received by the Committee and an Award of Merit was granted. The berries are amber-coloured and the flavour is exceptionally good. It was obtained by crossing Muscat of Alexandria and Black Hamburgh. Shown by Lionel de Rothschild, Esq. (gr. Mr. Geo. Reynolds), Gunnersbury Park Gardens, Brentford, London, W.

Groups.

The outstanding exhibit in the fruit and vegetable section was the group of vegetables shown by The Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree; indeed it was the feature of the whole exhibition and was deservedly awarded the Coronation Cup, being recognised as the most meritorious display in the show. The quality of the produce, as could be expected, was of the highest possible standard and throughout the meeting visitors thronged to admire the perfect productions of the kitchen garden, staged, as they were, with good taste and skill. The exhibit occupied a table length of some forty feet and in all about two hundred distinct dishes were displayed, every subject being as nearly perfect as it is possible to grow it. Potatos were exceedingly good and the varieties Di Vernon, Midlothian Early, The Bishop, King Edward, Edinburgh Castle, Katie Glover and Arran Comrade were a few of those shown. Of Peas there were columns and dishes of Quite Content, Gladstone and Duke of Albany, while the Autumn Giant, All the Year Round and Early Giant Cauliflowers were of the purest white. Chinese Artichokes, Cucumbers, Carrots, Parsnips, Salsify, Kohl Rabi, Leeks, Celery, Radishes, Runner Beans, Tomatos, Waxpod Beans, Beetroots, Brussels Sprouts, Globe Artichokes, Celeriac, Shallots and Onions were all equally well shown.

Messrs. Laxton Bros. had a group of Apples and Pears, and among dessert varieties of the former were the new Lord Lambourne, a mid-season variety obtained by crossing James Grieve and Worcester Pearmain, and Laxton's Superb, regarded as being an improvement on Cox's Orange Pippin. Cooking varieties were represented by fine dishes of Rev. W. Wilks, Lord Derby, Warner's King, Newton Wonder, and of Pears there were fine samples of Beurre Bedford, a cross between Marie Louise and Durondeau, Louise Bonne of Jersey, Pitmaston Duchess and the highly-coloured Marguerite Marillat.

Messrs. S. Spooner and Sons exhibited some fifty dishes of Apples, and good specimens of Charles Ross, Rev. W. Wilks, Wealthy, Annie Elizabeth, Lord Derby, Allington Pippin, and Baumann's Red Winter Reinette were shown; Pears included Conference, Fertility and Beurré Clairgeau.

The Studley Horticultural College for Women had a very attractive group in which the Pears were a feature. Souvenir du Congres, Beurré Hardy, Beurré Superfine, Santa Claus, Conference, Doyenné du Comice, La Belgique, and Beurré Boussoch were all of excellent quality, while amongst Apples there were attractive fruits of Peasgood's Nonsuch, Bismarck, Sandringham, Cox's Orange Pippin, and Wealthy. An extremely interesting collection of fruit trees in pots was shown by Messrs. T. Rivers and Son, the specimens of Apples, which carried perfect fruits, being Cox's Orange Pippin, Gascoyne's Scarlet, and Peasgood's Nonsuch. There were also heavily laden trees of President Plum and Sea Eagle Peach, and Figs were also shown in variety.

Mr. Edward J. Parsons showed the new Worcester Berry, the result of a cross between a Black Currant and a Gooseberry. The fruits resemble a Black Currant in appearance and are almost as large as a medium-sized Gooseberry. It is said to be excellent for making jam and jellies. The exhibit also contained fruiting sprays of the Himalayan Giant Blackberry and dishes of Apples and Pears.

Messrs. G. Bunyard and Co. staged a neat collection of Apples and Pears, and among the former were excellent dishes of Ellison's Orange, Egremont Russet, Rival, Barnack Beauty, Rev. W. Wilks, Ben's Red, and Emperor Alexander. Pears included perfect fruits of Marguerite Marillat, Triomphe de Vienne, and Conference.

The exhibit from the Swanley Horticultural College contained exceptionally fine baskets of Peasgood's Nonsuch, Bismarck, The Queen, and Rival among Apples and of Pears there were such varieties as Doyenné du Comice, Beurré Hardy, Pitmaston Duchess and Conference.

Messrs. John Waterer, Sons and Crisp, Ltd., showed specimen trees and picked fruits of their new culinary Apple John Waterer, a good keeping variety of large size; Cox's Orange Pippin, which were very large and well coloured; Emperor Alexander and Washington. There were also many specimen trees of Pears including the varieties Doyenné d'Alencon, and dishes of Doyenné du Comice and Marguerite Marillat.

Messrs. Daniels Bros. showed their late September Black Currant, a variety with large-sized berries, together with a choice collection of Apples and Pears in variety, while The Barnham Nurseries, Ltd., showed a wide range of dessert and cooking Apples, which included the varieties Charles Eyre, Washington Nonpareil, Allington Pippin, Cox's Orange Pippin, Bramley's Seedling, Grenadier and Worcester Pearmain. Of Pears there were clean and shapely specimens of Verulam and Triomphe de Vienne.

Fruit trees in pots were admirably shown by Mr. J. C. Allgrove, a large, fan-trained specimen of Prince of Wales Peach occupying the background. There were also standard specimens of a seedling Peach, together with Pineapple Nectarine, Cox's Orange Pippin Apple and late Orange, September Prolific and President Plums. Dishes of Peaches, Apples, Pears and Plums were arranged among the fruit trees. A Cultural Commendation was awarded to Mr. H. Hollis, Manresa House Gardens, Roehampton, for two fine bunches of Black Hamburgh Grapes cut from the famous Manresa House vine, reputed to be over one hundred years old, and which, this season, carried no fewer than six hundred and seventy-one bunches.

Awards by the Council.

Coronation Cup.—To the Hon. Vicary Gibbs (gr. Mr. E. Beckett, V.M.H.), Elstree, for the most meritorious exhibit in the show—vegetables.

Wigan Cup.—To Mr. Elisha J. Hicks, for the best exhibit of Roses.

Silver Cups.—To Mesrs. Hillier and Sons, Winchester; to Messrs. Dobbie and Co.; to Messrs. H. J. Jones, Ltd.; to Mr. George Prince; to Mr. J. Robinson; to Messrs. George Bunyard and Co.; and to Messrs. R. Wallace and Co.

Gold Medals.—To Messrs. Blackmore and Langdon; to Messrs. Sutton and Sons; to Messrs. Sanders; to Messrs. Stuart Low and Co.; to Mr. Elisha J. Hicks; to Mr. J. C. Allgrove; to the Hon. Vicary Gibbs (gr. Mr. E. Beckett, V.M.H.), Elstree; and to Mr. C. Engelmann.

Silver-Gilt Flora Medals.—To Mr. S. Smith; to Messrs. A Charlton and Sons; to Messrs. J. Cheal and Sons; to Messrs. Robt. Green, Ltd.; to Messrs. Waterer, Sons and Crisp; to Messrs. Charlesworth and Co.; to Messrs. Flory and Black; to Messrs. Carter Page and Co.; to Mr. J. B. Riding; to Mr. J. T. West; to Messrs. Dickson and Robinson; to Messrs. Keith Luxford and Co.; to Messrs. B. R. Cant and Sons; to Mr. W. E. Chaplin; to Messrs. S. McGredy and Son; to Messrs. D. Prior and Son, Ltd.; to Messrs. R. H. Bath, Ltd.; to Mr. J. MacDonald; to Messrs. Blackmore and Langdon (Delphiniums, etc.); to Messrs. L. R. Russell, Ltd.; to Mr. Clarence Elliott; to Messrs. Allwood Bros., and to Messrs. Stuart Low and Co. (for Carnations).

Silver-Gilt Banksian Medals.—To Messrs. Fletcher Bros.; to Mr. R. C. Notcutt; to Messrs Austin and McAslan; to Messrs. Dobbie and Co.; to Messrs. Bakers, Ltd.; to Messrs. Bowell and Skarratt; to Central Garden Supplies; to Mr. G. G. Whitelegg; to Mr. F. G. Wood; to Messrs. G. Gibson and Co.; to Messrs. W. Treseder, Ltd.; to Messrs. J. Stredwick and Son; to Messrs. Isaac House and Son; to Messrs. G. Jackman and Son; to Messrs. Jones and Ingwersen; to Messrs. Maxwell and Beale; to Mr. Amos Perry; to Mr. G. Reuthe; to Mr. E. Ballard; to Messrs. A. J. and C. Allen; and to the Rev. J. H. Pemberton.

Silver-Gilt Hogg Medals.—To Messrs. Barnham Nurseries, Ltd.; to the Swanley Horticultural College; to Messrs. Laxton Bros.; to Messrs. T. Rivers and Son, Ltd.; to the Studley College; and to Messrs. J. Waterer, Sons and Crisp, Ltd. (for fruit).

Silver Flora Medals.—To Messrs. Maxwell and Beale; to Mr. C. Turner; to Messrs. W. Cutbush and Son, Ltd.; to Mr. W. Yandell; to Messrs. F. Cant and Co.; to Messrs. J. Waterer, Sons and Crisp; to Mr. J. Mattock; to Mr. A. Edwards; to Messrs. Lowe and Gibson; to Mr. T. Carlile; to the French Intensive Gardens; to Messrs. Harkness and Sons; to Messrs. W. J. Godfrey and Son (herbaceous plants); to Messrs. B. Ladhams, Ltd.; to the Chalk Hill Nurseries; and to Messrs. Rich and Co.

Silver Banksian Medals.—To Messrs. J. Carter and Co. (Liliums); to Miss S. S.

Thompson; to Messrs. R. and G. Cuthbert; to Mr. John Klinkert; to Messrs. J. Cheal and Sons, Ltd.; to Messrs. W. Wells and Co.; to Mr. W. Wells, junior; to Mr. A. Warner; to the Orpington Nurseries Co.; to Mr. E. Dixon; to Messrs. J. Forbes, Ltd.; to Messrs. W. H. Rogers and Son.

Silver Hogg Medals.—To Messrs. S. Spooner and Sons, and Messrs. Daniels Bros., Ltd.

Bronze Hogg Medal.—To Mr. E. J. Parsons.

Bronze Flora Medals.—To Messrs. W. J. Godfrey and Son; to Messrs. W. H. Simpson and Son; to Mr. H. Hemsley; to Mr. J. J. Kettle; to Mr. B. Pinney; to Mr. H. Drew; to Mr. T. P. Edwards; and to Messrs. Reamsbottom and Co.

ROYAL SCOTTISH ARBORICULTURAL.

On Saturday, September 6, a party of upwards of fifty members of this society paid a visit to Dawyck, Peeblesshire, on the invitation of Col. F. R. S. Balfour, who very kindly conducted them round the unique collection of trees and shrubs which he has formed there.

Dawyck is situated in the centre of the county, in the valley of the Tweed, and the high hills with which it is surrounded give it a wild and romantic, but nevertheless very beautiful, setting, and it has a climate which seems to be exceedingly well adapted to the growth of Conifers, of which some large specimens were seen. These included old Silver Firs planted about 1862, which are about 115 feet in height and sixteen feet in girth; the old Larches, planted in 1725, which, with the exception of the specimen, or specimens, planted in the old Physic Garden at Edinburgh about forty years earlier, are believed to be the oldest in Scotland; Abies Nordmanniana over one hundred feet in height, the tallest in Scotland; besides large specimens of A. grandis and other American species of Silver Fir, Douglas Fir, Cypresses, and many others. The large specimen of the fastigiate Beech (Fagus sylvatica fastigiata)—which was first observed here—was also seen, as was also a beautiful specimen of the golden, weeping, Babylonian Willow.

It would be impossible to deal in detail here with the newer kinds of trees and shrubs which Colonel Balfour has introduced to Dawyck, but there may be mentioned the great number of new Rhododendrons from China, as well as most of the other introductions from that region. Specimens of Pyrus foliolosa in fine fruit were observed, and also a specimen of Larix Potanini bearing cones. This species is from the China-Tibetan borderland, and was introduced in 1904. It was remarkable to observe the success with which natural regeneration of many of the Conifers at Dawyck had been attended, and this was equally true of many broad-leaved trees and shrubs, as well as of many Rhododendrons.

Before leaving Dawyck House, where the party was very kindly entertained to tea by Colonel and Mrs. Balfour, a very hearty vote of thanks was accorded to Colonel Balfour on the motion of Mr. Allan, the senior vice-president.

ROYAL CALEDONIAN HORTICULTURAL.

September 10 and 11.—The autumn show of this society was held in the Waverley Market, Edinburgh, on these dates, and notwithstanding the unfavourable season there was a fine display of bloom. The entries in the competitive classes were fifty per cent. above those of last year, and the nurserymen's exhibits were also more numerous. The weather during the two days was favourable, and the attendance good. The show was formally opened by the Lady Susan Gordon Gilmour of The Inch. The Edinburgh and District Allotments' Federation again held their annual exhibition in connection with this show.

Fruit.

The Earl of Balfour, Whittingehame, East Lothian (gr. Mr. George Anderson), was the only entrant in a class for a table of twelve dishes of fruit, decorated, and he was awarded the first prize of £5 5s., together with the Laird and Dickson special prize of silver plate value £25. The fruits shown consisted of Muscat of Alexandria and Directeur Tisserand Grapes, Emerald Gem and Superlative Melons, Dymond and Royal George Peaches, Humboldt and Newton Nectarines, Souvenir du Congres and Marguerite Marillat Pears, Emperor Alexander and Peasgood's Nonsuch Apples. He obtained eighty-nine out of a possible ninety-six points for fruit.

There were three entrants in the class for eight bunches of Grapes, not fewer than four varieties, and not more than two bunches of any variety. The first prize of £4 and a gold badge, with the Thomson Challenge Trophy (to be won three times), was also awarded to the Earl of Balfour, who obtained fifty-five points out of a possible seventy. The Earl of Strathmore, Glamis (gr. Mr. D. M'Innes), was placed second with fifty-one out of a possible seventy-two points, and Sir Michael Nairn, Bt., Dysart House, Fife (gr. Mr. J. F. Stewart), obtained third prize with forty-three out of a possible seventy points. The points awarded to the Earl of Balfour's bunches were:—

	Maximum Points.	Points Awarded.
1. Muscat of Alexandria	10	8
2. „ „ „	10	7
3. Mrs. Pince	9	6
4. „ „	9	5
5. Directeur Tisserand	8	8
6. „ „	8	8
7. Alicante	8	7
8. „	8	6
	70	55

The Earl of Moray, Donibristle, Fife (gr. Mr. J. M'Kinna), was the only entrant for four bunches of Grapes, distinct varieties, and obtained the first prize. In the other Grape classes the Earl of Strathmore excelled for two buches of Muscat of Alexandria, one bunch of Muscat of Alexandria, and one bunch of Gros Colman. Brigadier-General J. A. Harrison Crawford, Dunlop House, Ayrshire (gr. Mr. D. Airdrie), excelled for two bunches of Black Hamburgh, and one bunch of Black Hamburgh Grapes, while Sir Michael Nairn led for one bunch of Alicante, and the Earl of Balfour for one bunch of Appley Towers Grapes.

The Earl of Balfour excelled for a green-fleshed Melon, and J. A. Hood, Esq., Midfield, Lasswade (gr. Mr. N. Leyden), for a scarlet-fleshed Melon. Lady Dundas of Arniston, Gorebridge (gr. Mr. R. Mackenzie), led for twelve Figs. The Earl of Balfour was placed first for six Peaches, with magnificent fruits of Exquisite, and also for twelve purple Plums, and four varieties of culinary Plums. D. Landale, Esq., Dalswinton, Dumfries (gr. Mr. R. A. Grigor), won first prize for six Nectarines. F J. Usher, Esq., Dunglass, East Lothian (gr. Mr. J. Notman), led for twelve Apricots, twelve Gage Plums, twelve yellow Plums (exclusive of Jefferson) and twelve red Plums; and Sir W. H. May, Bughtrigg, Coldstream (gr Mr. J. Loan)), excelled for four varieties of dessert Plums.

For fruits from plants permanently planted in the open air, ripe or unripe, the Hon. Mrs. Askew Robertson, Ladykirk, Norham (gr. Mr. G. Little), was placed first for twelve varieties and six varieties of Apples respectively, and also for six fruits of James Grieve, all grown in Scotland. In the other classes for Apples grown in Scotland, six fruits of each, Mr. J. P. Reid, Aberlady, East Lothian, excelled for Newton Wonder, Golden Spire, Grenadier, Stirling Castle and Warner's King; J. J. Bell Irving, Esq., Makerstoun, Kelso (gr. Mr. R. Auldjo), for Rev. W. Wilks, Peasgood's Nonsuch, and for any other dessert variety with Beauty of Bath. Mr. D. Fraser, Saltoun Gardens, East Lothian, led for Irish Peach; the Rev. N. C. Keith, Dirleton, East Lothian (gr. Mr. R. Munro), for Worcester Pearmain and Charles Ross; the Earl of Balfour for Ecklinville and Lane's Prince Albert; F. J. Usher, Esq., for Lord Derby, Lord Suffield and Bramley's Seedling; and J. J. Cowper, Esq., Gogar House, Midlothian (gr. Mr. R. W. Dingwall), for any other culinary Apple with Early Victoria.

Mrs. Askew Robertson was placed first for twelve varieties of Apples, five fruits of each, grown in the open or otherwise, ripe or unripe, and Mr. D. Dowhill Doughty, Ayton, Berwickshire, excelled for six fruits of one variety of a dessert Apple grown in Scotland, fit for table, with Beauty of Bath.

In the classes for Pears, ripe or unripe, J. A. Hunter, Esq., Inchmartin, Inchture (gr. Mr. A. Benvie), was placed first for six varieties, four of each, and Mr. J. Mackenzie, Lochend Gardens, Dunbar, excelled for a similar collection grown in Scotland. In the other classes for Pears grown in Scotland Mr. Mackenzie excelled for Souvenir du Congres and William's Bon Chrétien; Mrs. Askew Robertson for Beurré d'Amanlis; Mr. J. P. Reid, Aberlady, for Durondeau; Sir W. H. May, for Conference; J. R. Dale, Esq., Seacliff, North Berwick (gr. Mr. N. Pattie), for Jargonelle; Mr. W. Aitchison, Thurston, Innerwick, for Louise Bonne of Jersey, and F. J. Usher, Esq., for Pitmaston Duchess.

In the small fruit classes, Mr. R Donaldson, Blackford, Perthshire, led for Gooseberries; Frank Warrack, Esq., Kersewell, Carnwath (gr. Mr. J. Watt), for Black Currants and White Currants; the Earl of Balfour for Red Currants; Mr. James Weir, Edinburgh, for Loganberries, and J. J. Cowper, Esq., for Morello Cherries.

Plants.

In the plant classes, Mr. W. Brown, Edinburgh, was placed first for nine dwarf hardy Ferns. Mr. J. Arnot, Corstorphine, obtained first prize for two single Begonias and for two double Begonias; Mrs. Beveridge, Kirkaldy (gr. Mr. P. Reid), excelled for three tuberous-rooted Begonias, for two Fuchsias, for one Fuchsia, and for three zonale Pelargoniums; Mr. W. Howieson, Dolphinton, led for two tuberous-rooted Begonias, and the Royal Victoria Trust, Liberton, Edinburgh (gr. Mr. J. Douglas), led for two greenhouse plants.

In the classes confined to amateurs, Mr. W. F. D. Nairn, Cramond, was first for one Fuchsia; Mr. R. Kerr, Edinburgh, for one flowering plant; Mr. W. Aitken, Penicuik, for one zonale Pelargonium, and Mr. W. Shepherd, Edinburgh, for one Hydrangea.

Cut Flowers.

For eighteen vases of flowers from the open ground, to the first prize for which is attached the Silver Cup presented by Messrs. John Phillips and Son, Edinburgh, Mr. P. F. Bauchop, Alexandria, was placed first. The first prize winners in the other classes were:—For twelve bunches of Sweet Peas and for six bunches of Sweet Peas, Mr. Grigor, Duff House, Banff; for a collection of garden and decorative Roses, the Royal Victoria Trust; for twenty-four Roses and for twelve Roses, Mr. J. Macbrayne, Newton Mearns; for a vase of Rambler Roses, Lady Dundas; for six of any crimson or scarlet Rose, F. J. Usher, Esq., with Captain O. Fitzgerald; for six of any white Rose, Sir Basil Montgomery, Kinross House (gr. Mr. R. Fraser), with Frau Karl Druschki; for six of any pink Rose, Mr. J. Russell, Newton Mearns, with Caroline

Testout. Mr. Usher also excelled for a vase of Roses, and Sir Basil Montgomery for six vases of Roses.

Mrs. Askew Robertson won first prize for four bunches of Antirrhinums; Mr. C. Jenkins, Cambuslang, for three vases of Asters; Mr. R. Robertson, Swinton, Berwickshire, for twelve blooms of French and six blooms each of lemon and orange African Marigolds; Mr. H. M'Coll, Preston House, Linlithgow, for twelve Show Pansies; Mr. J. Paterson, Philipstoun, for twelve Fancy Pansies, and Mr. A. Young, Lanark, for six sprays of Violas. Mrs. Askew Robertson excelled for three vases of East Lothian Stocks; F. J. Usher, Esq., for two vases of Scabious; Mr. C. Jenkins for one vase of early-flowering white Chrysanthemums; Sir Basil H. Dalrymple for one vase of a yellow variety; and Mr. D. Stevenson, Melrose, for a vase of a crimson variety, and a vase of a variety in any other colour.

Lady Dundas won first prize for four vases of perpetual-flowering Carnations; Mr. W. Aitchison, Thurston, Innerwick, for two vases of these; and Mr. W. Howieson, Dolphinton, for six double Begonias. Mr. C. Jenkins was placed first for six vases of Collerette Dahlias and for three vases of Pompon Dahlias; and Mr. R. Robertson, Swinton, for three vases of Show or Fancy Dahlias. Brigadier-General Harrison Crawford excelled for twelve Gladioli, and for six Gladioli; Lady Dundas was placed first for twelve vases of Phloxes; Mrs. Reid, Thomanean, Milnathort (gr. Mr. J. Pearson), for six bunches of hardy herbaceous perennials; Mr. W. Howieson for one vase of Michaelmas Daisies; Sir Basil Montgomery for three vases of Montbretias; and Alastair Currie, Esq., Walkerburn, for six vases of annuals.

The following were the first prize winners in the classes confined to amateurs:—Vase of single Asters, vase of double Asters, two vases of Collerette Dahlias, and a vase of Pompon Dahlias—Mr. C. Jenkins; vase of French Marigolds, vase of orange African Marigolds and vase of lemon African Marigolds—Mr. A. Young, Lanark; three vases of ten-week Stocks—Mr. R. Robertson; and twelve Carnations or Picotees—Mr. P. Lugton, Ayton.

Vegetables.

For twelve dishes of vegetables, Mr. John Gray, Uddingston, was placed first with sixty-two out of a possible seventy-six points. The Earl of Balfour was awarded the second prize. For a collection of six kinds, confined to amateurs, Mr. P. Reid, Kirkcaldy, obtained first honours. In the single dish classes, Mr. Gray, Mr. Jenkins, Lord Cochran of Cults (gr. Mr. J. Smith), Mr. R. Mason (Lanark), Sir W. M. May, J. J. Cowper, Esq., Mr. G. M. Service (Gilmerton), Mr. J. M. Borthwick (Ratho), Mr. P. Lawrie, Mr. R. M'Donald, Mr. R. Watson, Mr. C. Davidson, Mr. J. Darling, and F. J. Usher, Esq., were the principal prize winners.

Open Classes: Cut Flowers.

For thirty-six specimen blooms of Roses Messrs. Adam and Carmile, Aberdeen, were placed first, and they also took first place for eighteen blooms. Mr. R. Ferguson, Dunfermline, was placed first for twelve blooms of any red or crimson Rose, with George Dickson, and Messrs. D. and W. Croll, Dundee, excelled in the classes for twelve blooms of any white and twelve of any pink Rose, with Frau Karl Druschki and Mrs. John Laing respectively. For twelve vases of Roses, Messrs. T. Smith and Sons Stranraer, were first; Mr. R. Ferguson for twelve vases of garden or decorative Roses, and Mr. W. Ferguson for six vases of this class of Rose. Messrs. T. Smith and Sons led for six baskets of Roses. Mr. Jenkins excelled for six vases of Collerette Dahlias, and Messrs. G. Mair and Sons, Prestwick, were easily first for twenty-four Gladioli, not more than two of any variety, with superb spikes.

Mr. Jenkins was placed first for twelve vases of early-flowering Chrysanthemums, disbudded, for which the Scottish Challenge Cup is offered along with the first prize; and Mr. D. Duncan, Edinburgh, excelled for twelve bunches of these flowers, not disbudded

Allotments' Federation.

The Silver Challenge Cup for the best collection of vegetables, and the Silver Medal for the best individual exhibit, were won by Mr. W. Kennedy, Craigmillar.

Non-Competitive Exhibits.

The following awards were made to trade groups:—

Gold Medals.—Messrs. Dickson and Co., Edinburgh, for Roses; Messrs. Dobbie and Co., Edinburgh, for Roses, Dahlias and Sweet Peas; Messrs. Laird and Dickson, Edinburgh, for a miniature rock garden; Mr. David King, Edinburgh, for model lawn, wall garden, etc.; Messrs. Austin and M'Aslan, Glasgow, for vegetables, etc.; Messrs. Storrie and Storrie, Glencarse, for fruit trees in pots, etc.; The Carse of Gowrie Nursery Co., Errol, for fruit trees, etc.; Messrs. John Forbes (Hawick), Ltd., for Phloxes and other herbaceous plants, and Mr. C. Engelmann, Saffron Walden, for Carnations.

Silver Gilt Medals.—Messrs. Cunningham, Fraser and Co., Edinburgh, for herbaceous plants; Mr. W. Wells, Jnr., Merstham, for herbaceous flowers; Messrs. Learmont, Hunter and King, Ltd., Dumfries, for fruit trees in pots; Messrs. Tillie, White and Co., Edinburgh, for vegetables and fruits; Messrs. Isaac House and Son, Bristol, for Scabious; Mr. Campbell, Newlands, for model rockery, etc.; Messrs. D. and W. Croll, Dundee, for Roses; and Messrs. E. F. Fairbairn and Son, Carlisle, for Phloxes.

Silver Medals.—Messrs. Thomas Methven and Sons, Edinburgh, for Chrysanthemums and Japanese novelties; Messrs. Bakers, Ltd., Wolverhampton, for Gladioli and other herbaceous plants; Messrs. Blackmore and Langdon, Bath, for Begonias and herbaceous plants.

Awards to Novelties.

Awards of Merit.—To Miniature Paeony-flowered Dahlias Rouken Glen and Golden, and dwarf single Dahlia Dinkie, exhibited by Messrs. Dobbie and Co., Edinburgh; to early-flowering Chrysanthemums Janet Wyper and Mary A. Houston, exhibited by Mr. Alex. M'Alpine, Braidfield, Tollcross, Glasgow; and to Gladiolus Mabel, exhibited by Messrs. George Mair and Sons, Prestwick.

The September meeting of this Society was held at 5, St. Andrew Square, Edinburgh, Mr. R. Fife, president, in the chair. Mr. R. L. Harrow of the Royal Botanic Garden, Edinburgh, gave a very interesting lecture, illustrated by a fine series of lantern slides, on "Flowering Shrubs," for which he received a very cordial vote of thanks.

READING AND DISTRICT GARDENERS' MUTUAL.

The last meeting of the summer session was held on Saturday the 6th inst. when a party, including the President, Mr. Councillor Frank E. Moring, and Chairman, Mr. Mark Goddard, paid a visit to Ridgmont, Shinfield, the residence of Mr. A. J. Cobb, Lecturer in Horticulture, Reading University College, to inspect his unique collection of seedling Dahlias. For several years Mr. Cobb has been building up this collection by assiduous hybridising, and has raised some lovely and interesting novelties, several of which have been granted awards by the Royal Horticultural Society, including Mrs. Ewebank, St. Davids, and Sweet. These have stiff, wiry stems, and with very small foliage.

Afterwards, the members visited The University College Gardens, and the first things to claim attention were the rock garden and herbaceous border; in the latter the usefulness of the Dahlia was demonstrated by the unusual variety of colour which these plants maintain till cut down by frost. On the rock garden was noticed a nice clump of Viola gracilis Purple Robe, a mass of bloom; V. cornuta, Cerastium tomentosum, and Gnaphalium microphyllum, whilst bold groups of golden Thyme looked well among the grey stones. The woolly-leaved Thymus lanuginosus, showed to advantage, clothing a dry bank. Among the shrubs, good specimens of Senecio Grayii, Berberis Wilsonae, and B. stenophylla (flowering a second time) were noticed, whilst Choisya ternata was in full bloom.

In a plot arranged in front of the glass-houses was a fine selection of named Dahlias, planted out in threes. Some of the best were, Jhr. Van Tets, a pure white Cactus variety; Mirrie, buff, and De Rose, rose, two fine Decorative varieties; Flame, an orange-scarlet single variety; Bonfire, scarlet, and Jewell, deep crimson, of the Collerette section; Lovely and Our Annie, miniature Paeony-flowered varieties, and Marianne, an apricot, miniature Decorative variety.

In the vinery there were some fourteen varieties of Grapes, chief among which were Cannon Hall Muscat, Muscat of Alexandria, Lady Hutt, Madresfield Court, Alicante, and Diamond Jubilee.

Large areas are devoted to vegetables of all kinds, the plantings of Broccoli and Winter Greens occupying many acres. Hardy fruit is scarce this year although Newton Wonder, James Grieve, and Bramley's Seedling Apples are cropping fairly. Most of the fruit trees were well set with fruit buds for 1925.

The sincere thanks of the members were gived to Mr. A. J. Cobb, and also to Mr. H. H. Cook and Mr. R. J. Lloyd for their kindness in providing such an educational and enjoyable meeting.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

The Monthly Meeting of this Society was held in the Royal Horticultural Society Hall on Monday, September 8, Mr. T. R. Butler presiding. Five new members were elected

Two members withdrew £4 10s. 0d. interest, and three members, over the age of seventy years, withdrew £53 9s. 7d. from their deposit account, and one lapsed member £22 9s. 2d. The sick pay for the month on the ordinary side amounted to £52 4s. 2d. and on the State side to £53 19s. 6d.; maternity claims came to £8.

Three cases for dental treatment were considered and two members were granted the sum of £6 19s. 1d. for dental treatment. A letter was received from Lionel de Rothschild, Esq., accepting the invitation to preside at the Society's Annual Dinner on November 6.

HOVE HORTICULTURAL.

The annual show of the Hove Horticultural and Allotment Holders' Association was held in the Town Hall, Hove, on the 17th inst. The Viscountess Wolseley performed the opening ceremony and was attended by the Mayor, Alderman W. Jago, J.P. The number of entries was a record for the Society, there being no fewer than five-hundred-and-seventy exhibits compared with five-hundred-and-forty-one last year. The principal prize-winners were Mr. A. E. Morris, who secured the Association's Challenge Cup for a collection of vegetables;

Mr. W. SINFIELD, who was awarded the Dennis Silver Challenge Cup for a collection of vegetables; and Mr. W. H. VOKINS, who won the Association's Silver Challenge Cup for a display of flowers and plants.

Trade exhibits were shown by Mr. ARTHUR PRATT, Brighton, (herbaceous flowers); Messrs. BURFOOT, BROS., Kingston-by-Sea (Potatos); Messrs. J. CHEAL AND SONS, Ltd. (Dahlias); and Messrs. J. BOX, Ltd., Lindfield (herbaceous plants).

ROYAL HORTICULTURAL.

Trial of Dwarf French Beans.

THE following awards have been made to Dwarf French Beans by the Royal Horticultural Society after trial at Wisley.

AWARDS OF MERIT.

Waxpod varieties:—*King of the Wax*, sent by Messrs. J. Carter AND Co.; and *Perfection*, sent by Messrs. BARR AND SONS.

HIGHLY COMMENDED.

Melting Wax, sent by Messrs. J. CARTER AND CO.; *Yellow Gem*, sent by Messrs. BARR AND SONS; *Wax Date*, sent by Messrs. L. DAEHNFELDT, LTD.

COMMENDED.

Wax Flageolet, sent by Messrs. L. DAEHNFELDT, LTD., and *Haricot rain Beurre cent pour un*, sent by Messrs. RIVIORE, AND SONS.

AWARDS OF MERIT.

Tough Green Podded varieties.—*Ne Plus Ultra, selected*, sent by Messrs. G. COOLING AND SONS; *Mogul*, sent by Mr. CHAS. ELLIOTT; *Masterpiece*, sent by Messrs. DOBBIE AND CO., LTD.; *Longswood, reselected*, sent by Messrs. J. CARTER AND CO.; *Nonsuch*, sent by Messrs, WATKINS AND SIMPSON, LTD., *XL All* sent by Messrs. F. DICKS AND CO.; *Reliance*, sent by Messrs SUTTON AND SONS; *Dwarf Fillbasket*, sent by Messrs. BARR AND SONS; *Bountiful*, sent by Messrs. WEBB AND SONS, LTD.; *St. Andrews*, sent by Messrs. HEINEMANN AND CO.; *English Wonder*, sent by Messrs. CLIBRANS, LTD.; *Excelsior*, sent by Messrs. BARR AND SONS. These last ten varieties were much alike. *Bounteous*, sent by Messrs. WATKINS AND SIMPSON, LTD.; *Perpetual*, sent by Messrs. BARR AND SONS and Messrs. CARTER AND CO.; *Evergreen*, sent by Messrs. SUTTON AND SONS. These three varieties were alike *Mastodon*, sent by Mr. C. ELLIOTT; *Superlative*, sent by Messrs. T. CULLEN AND SONS; *Magpie*, sent by Messrs. J. CARTER AND CO. and Messrs. HARRISON AND SONS. These last two varieties were alike. *The Wonder*, sent by Messrs. WATKINS AND SIMPSON, LTD; *Canadian Wonder*, sent by Messrs. A. DICKSON AND SONS, LTD., Messrs. DOBBIE AND CO., LTD., and Messrs. NUTTING AND SONS, LTD.; *Canadian Wonder, selected*, sent by Messrs J. CARTER AND CO.; *Canadian Wonder, improved*, sent by Messrs. W. H. SIMPSON AND SONS, and *Canadian Wonder, Express*, sent by Messrs. J. CARTER AND CO.

HIGHLY COMMENDED.

Haricot rain de St. Germain sent by Messrs. RIVOIRE, AND SONS; *Chevrier Vert*, sent by Messrs. J. CARTER AND CO., and *Chevrier Green*, sent by Messsrs. A. DICKSON AND SONS, Ltd. These last two were alike. *Earliest of All*, sent by Messrs. W. H. SIMPSON AND SONS, Messrs. NUTTING AND SONS, Ltd., Messrs. J. CULLEN AND SONS, Messrs. A. DICKSON AND SONS, Ltd., and Messrs. DOBBIE AND CO., Ltd., and *Cluster*, sent by Messrs. WEBB AND SONS, Ltd.

COMMENDED.

Ne Plus Ultra, sent by Messrs. COOPER, TABER AND CO., Ltd., Messrs. WATKINS AND SIMPSON, Ltd., Messrs. DOBBIE AND CO., Ltd., and Messrs. J. CARTER AND CO.; *Ne Plus Ultra*, sent as "Incomparable" by Messrs. J. KELWAY AND SON; *Harbinger*, sent by Messrs. WEBB AND SONS, Ltd.,; *Thanet Giant*, sent by Messrs. WATKINS AND SIMPSON, Ltd., and *Fifty Days*, sent by Messrs. J. CARTER AND CO.

FIRST-CLASS CERTIFICATE.

Masterpiece Improved, sent by Mr. CHAS. ELLIOTT. The varieties *Bounteous*, *Perpetual* and *Evergreen* were recommended for private garden use, and the variety *Fifty Days* for earliness.

Obituary.

James Grieve.—By the death of Mr. James Grieve, of Messrs. James Grieve and Sons, Redbraes Nursery, Edinburgh, a link with a former generation of Scottish horticulturists has been severed, and an outstanding personality has been removed. Mr. Grieve, who was in his eighty-fourth year, had not been in good health for some months. Born at Peebles, he served his apprenticeship in the nursery of Messrs. Gentle and Son of that town, and subsequently removed to Stobo Castle Gardens, in the same county. In 1859, he entered the employment of Messrs. Dicksons and Co., Edinburgh, and later became general nursery manager at their Pilrig and Redbraes. nurseries. On their removal to their present nurseries at Craigmillar in 1896, Mr. Grieve, with his sons, commenced business at Redbraes, the Pilrig nursery being required for railway extensions. Mr. Grieve was a keen hybridist, and a successful raiser of Violas and other florists' flowers. He was also the raiser of Rhododendron Grievii and some other hybrids of this genus, and of several Apples.

Mr. Grieve took much interest in the local horticultural and kindred societies. Besides being a fellow of the Royal Horticultural Society, he was a member of the Royal Caledonian Horticultural Society, the former Scottish Horticultural Association, and the Botanical Society of Edinburgh, on the councils of all of which he served. He was much in request as a judge at horticultural exhibitions and as a lecturer on florists' flowers. On the occasion of his jubilee as a nurseryman, in 1909, he was made the recipient of a handsome testimonial subscribed for by leading nurserymen and gardeners, and in 1914 he was awarded the Neil Prize in Horticulture by the Council of the Royal Caledonian Horticultural Society. The interrment took place at Rosebank Cemetery, Edinburgh, on the 18th inst., in the presence of a very large number of his former friends and associates.

ANSWERS TO CORRESPONDENTS.

FUNGI ATTACKING PLANE TREES AND STRAWBERRIES: *T. S.* This is a very destructive disease and is caused by the fungus Gnomonia veneta, badly attacked trees often being completely defoliated. Minute spore clusters are formed along the veins on the undersurface of the leaves; the mycelium of the fungus passes into the leaf stalk, cuts off the supply of water and food and causes them to fall prematurely. The disease may be checked by spraying with Bordeaux mixture and all fallen leaves should be carefully collected and burnt. The Strawberry is affected by the fungus Sphaerella fragariae, causing the small reddish-brown patches on the leaves. This disease is very common in this country, and it is claimed that it may be kept in check by removing the foliage about this time and burning it, covering the crowns with a light coating of straw. This may seem a harsh treatment, but the plants do not appear to suffer by the complete removal of the foliage at this time. In its early stages the disease may be controlled by spraying with potassium sulphide solution and the operation should be continued at fortnightly intervals until the flowers begin to open.

LABURNUM ADAMII: *C. A.* Laburnum Adamii is a graft hybrid and the species concerned are Cytisus purpureus and Laburnum vulgare. It appeared in 1825 at Vitry, near Paris, in the nursery of M. Jean Louis Adam, who is said to have grafted Cytisus purpureus on to the common Laburnum. Propagation is effected by grafting.

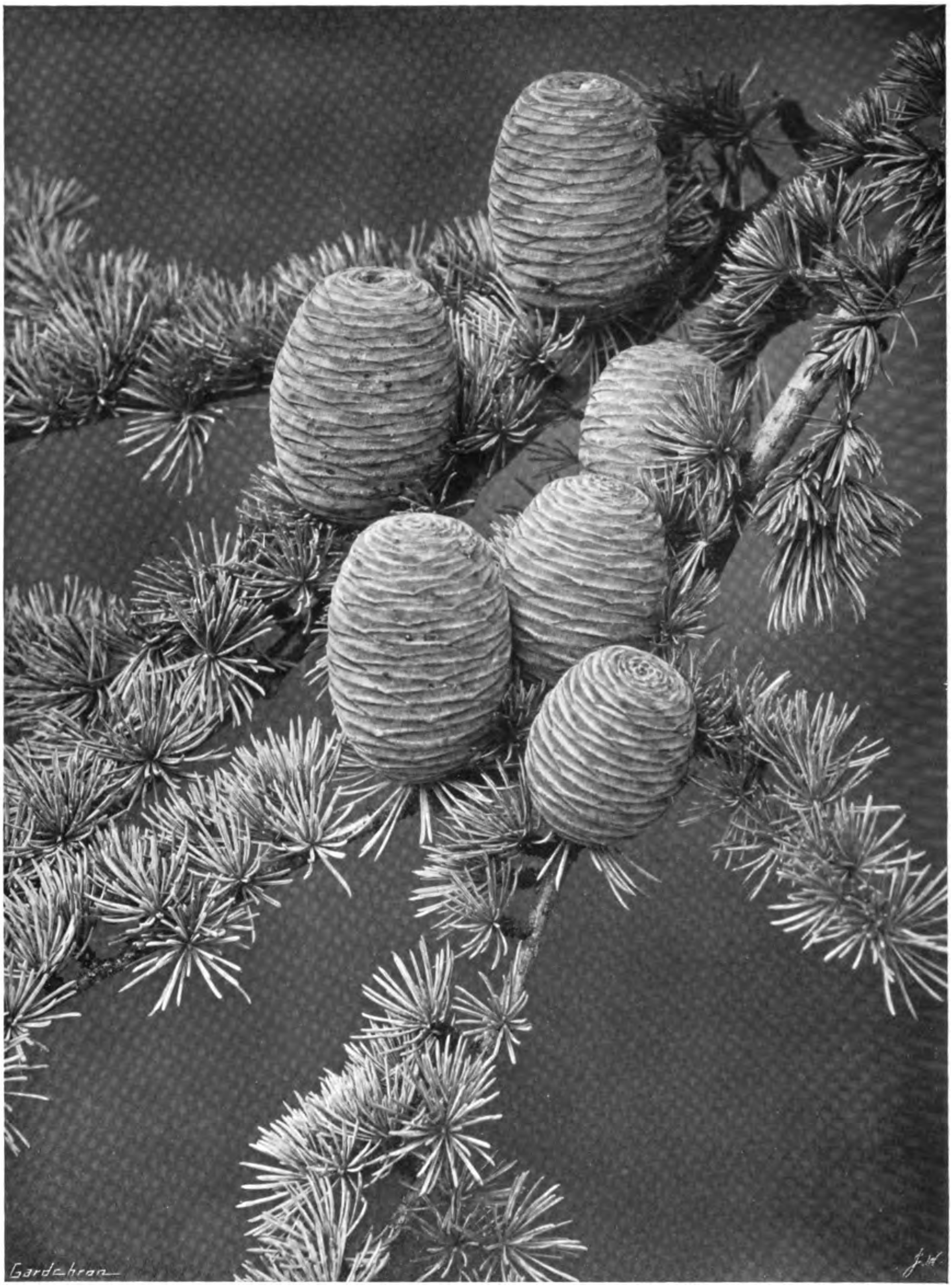
LILIUM FOLIAGE FOR EXAMINATION: *W. L.* The foliage is free from disease and the trouble may, as you suggest, have been caused by frost, but we are inclined to think there is bad root action. Keep the ground well watered and apply a dressing of a good complete manure, such as Clay's fertiliser occasionally.

NAMES OF FRUIT: *F. S. H.* 1, Lady Sudeley: 2, Beauty of Bath; 3, Allington Pippin; 4, Ribston Pippin.

ONIONS AND VINES: *A. F.* The Onions are affected with the fungus Sclerotium cepivorum, which also causes a serious disease in Leeks. The plants should be dusted with dry Bordeaux powder or quicklime, and care should be taken not to grow Onions on the same land for a number of years. The Vines have no disease present on the leaves. The discoloured areas have doubtless been caused through late or imperfect ventilation on bright sunny mornings.

VINE LEAVES DISCOLOURED: *A. G.* The premature discolouration of your Vine leaves is due to an insufficiency of one or more of the principal elements of plant food in the soil; which is lacking we are unable to state without further evidence, but if one is absent the others are useless. We advise applying superphosphate, two pounds to the perch now and repeat the application just before the vines start growing in the spring. This will give a temporary supply of phosphates. For greater permanency steamed bone flour, six pounds or seven pounds to the perch, is recommended to be given any time between now and Christmas. It will also be desirable to apply sulphate of potash, four pounds to the perch, during winter, and if there is no old mortar in the border slaked lime, a half peck to the perch, should be spread on the surface of the border at the same time. There is no risk in applying these materials, and amongst them the missing link is sure to be found. During the growing season next year a little half-decayed stable manure and two or three applications of nitrate of soda, one lb. to the perch, at intervals of three weeks, before colouring commences, will probably supply every requirement, supposing watering is attended to properly. You state that the Vines are planted inside, but are you sure the roots are there? They may be struggling amongst the Cabbages outside, for bricks and mortar will not confine them if they do not get all they want inside the house. Do not allow a heavy crop of Grapes to remain on the vines this season. The fruit will not be perfect and the larger the crop is, the worse will be the quality. The dead remains of red-spider were visible on the Muscat of Alexandria leaves. You have probably killed the insects by the application of sulphur. To avoid a return of this pest you should paint the rods twice during the dormant season with soft soap, half a pound to the gallon of water, with as much sulphur as will bring it to the consistency of cream. This will not hurt the buds if ordinary care is taken.

Communications Received.—A. G.—S.—F.—H. W—R. H. W.—C. L.—S. B—E. W.—H. B.—T. R.—H. V.



CONES OF CEDRUS ATLANTICA GLAUCA.

THE Gardeners' Chronicle

No. 1971—SATURDAY, OCTOBER 4, 1924.

CONTENTS.

Alpine Garden—
  Kirengeshoma palmata 233
Annuals for greenhouse and conservatory decoration 232
Apple orchards in Devon 241
Apple transport, conditions of 228
British Empire Exhibition, forestry at the 238
Bulb Garden—
  Colchicum Bornmuelleri 233
Bulbs, Dutch, and Dutch competition 241
Catalogue descriptions 241
Dahlia, the decorative 229
East Malling Research Station 227
"Eat more fruit" campaign 228
Fruit garden—
  Cordon dessert Apples 239
Fruit presented to Lord Mayor of London ... 228
Garden-craft in the Canticles 234
"Gardeners' Chronicle" seventy-five years ago 229
Hardy Flower Border—
  Autumn flowers ... 231
  Poterium obtusum ... 231
  Sidalcea Sussex Beauty 231
Hayes, Mr. T. R. ... 228
Imperial Botanical Conference 238
Park, gift of a 229
Plants new or noteworthy—
  Schizophragma integrifolia... 231
Potato trials in Cornwall 227
Rhododendrons ... 236
Rose garden—
  Roses for arches ... 232
Seeds, the germinating power of 227
Societies—
  British Florists' ... 242
  Deeside Field Club ... 241
  National Chrysanthemum 241
  Manchester and North of England Orchid 242
Trees and Shrubs—
  Potentilla Vilmoriniana 236
  Some good shrubs of early autumn ... 235
Trees as aerials for wireless 228
Vegetable Garden—
  Late Peas 241
  The Onion 240
Week's Work, the ... 230
Wembley, Chrysanthemums at 228
Wisley, Rose trials at 227

ILLUSTRATIONS.

Chrysanthemum Lichfield Peach 229
Hayes, Mr. T. R., portrait of 228
Onion, Ronden Ayenyn, illustration of the 240
Polystichum angulare divisilobum nitescens grande ... 232
Potentilla dahurica var. manchurica 233
Pyrus pinnatifida, fruiting branch of 235
Schizophragma integrifolia 231

SUPPLEMENTARY PLATE.

Cones of Cedrus atlantica glauca.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 50·9.

ACTUAL TEMPERATURE:—
Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 1, 10 a.m.: Bar. 29·8: temp. 54°. Weather, very dull.

The Germinating Power of Seeds.

THE length of time during which seeds of different species of plants retain the power of germination has, it need scarcely be said, important scientific and practical bearings. The plant physiologist is interested in the subject because it confronts him with problems of life and death which he would give much to solve. He asks himself—and for the most part vainly—Why should time seem to put an irrevocable limit to the power of recovery of a plant from its dormant state; and why, during the period of storage, does life, which seems not to stir in it, nevertheless ebb away from the resting seed so surely that year by year the increasing slowness of germination of samples from the same harvest marks, step by step, the way to dusty death? To these, and to many other questions arising out of the behavior of seeds, the plant physiologist knows as yet no certain answer. The seedsman, and the gardener and farmer, have also interest in the life and vagaries of seeds, for the success of a crop may often depend, not only on the germinative capacity of the seeds sown, but also on the speed and uniformity of germination. Herein lies the reason for the well-established and just preference for seed of the previous harvest. Except in some rare instances where old seeds germinate better than new, as is said to be the case with Melons, no one would use old seeds who could obtain new. The old, if not too old, may, it is true, germinate sufficiently well, but they are almost certain to come up less quickly and more unevenly than new seeds. The gardener, in particular, who grows plants the seeds of which are sometimes most capricious in germinating, would be glad to learn how he could make seeds of, say, species of Primula come up with the brisk punctuality of Wheat or Peas, instead of lingering below ground it may be for a year or more, and then germinating, not in battalions but in single spies, whilst over the seed pan a scum of Algae makes even this casual germination yet more occasional. The most recent records[*] of the times during which economic plants and Conifers retain their powers of germination add usefully to the mass of data already accumulated by other workers in this field. It is shown, for example, that longevity runs in families. The Cruciferae enjoy—with respect to the length of time during which seeds retain vitality—a relatively long span of life, whereas the days of the Umbelliferous seeds are short and few. Thus, the Crucifer, Sinapis alba, after ten years of rest, germinates about fifty per cent. of its seeds, and even after fifteen years an occasional seed is found to be viable. How long the allied species, Charlock, may lie in the ground and yet germinate is unknown, but as every farmer knows, the moment he begins to stir the sub-soil, a new and vigorous crop of this weed springs up and gives trouble. The Carrot is a good example of the bad keeping qualities of Umbelliferous seeds. Even at its best not many more than seventy-five per cent. may germinate, and the percentage falls rapidly until in the fifth year from harvest it is no more—and often less—than twenty per cent. The Caraway—Carum Carvi—is worse, and after three years germinates not at all. The Parsnip—Pastinaca sativa—is almost as bad, and of seeds more than four years old, scarcely one will germinate. Seeds of Conifers are generally short-lived. Scots Pine (Pinus sylvestris) and P. montana are better than most, and seven-year-old seeds make the fair showing of some fifty per cent. of germination. Larch—Larix europaeus—and Abies balsamea fail almost completely after two or three years, and the Austrian Pine gives few plants from seeds more than four years old. In garden practise the question of the age of seeds scarcely arises, for seedsmen have no less interest than gardeners in bringing seeds of recent harvesting into use, and they supply now under compulsion, what before they were wont to supply voluntarily, viz., a statement of the germinative capacity of the seeds they sell. As to difficult seeds, there are numerous specifics which have been tried to quicken germination. Potassium iodide is said to be useful, and this chemical may be; but until more is known of the reason for dormancy and the change which brings about activity in seeds, these prescriptions can only be empirical—useful, perhaps, for one kind, and useless for another. There is a fine field for research into the dormant life of things, and it is to be hoped that workers will be found to cultivate it.

Our Supplementary Plate.—Cedrus atlantica glauca although one of the commonest of Conifers is, nevertheless, one of the most graceful, and like the type it is of pyramidal habit, often assuming a great height. The bluish greyness of the leaves adds a distinction to the tree and makes it a delightful subject for the garden, retaining as it does its attractiveness throughout the whole year. The cones, too, possess exceptional beauty, and, as our Supplementary Plate well depicts, they are barrel-shaped and set erectly on short stalks. Like other members of the genus, C. atlantica glauca delights in a light, well drained soil, and some very picturesque groupings may be obtained by using it judiciously with Cupressus Lawsoniana, C. nootkanensis, and other quick-growing, columnar-shaped Conifers.

Rose Trials at Wisley.—The Director of the Royal Horticultural Society's Gardens requests us to remind raisers of new Roses of the trials that are in progress at Wisley. Raisers are invited to send six plants of each new variety for trial, to reach him by the end of November. These will be planted near varieties already growing, with standard varieties for comparison. The trials will be judged by a committee of Rose growers specially appointed for the purpose.

Potato Trials in Cornwall.—The Cornwall Education Committee has issued the report on the early-Potato trials undertaken at Culval this year. The trials were conducted on similar lines to those of 1923 and were designed to compare the crops from "seed" obtained from various sources. The crops were lifted on June 5, and Scotch-grown Epicure yielded at the rate of 8.7 tons per acre; it is recommended that this variety, being a consistent and heavy cropper, should be grown more extensively in the county. It is unpopular on account of its shape, but, nevertheless, realises as high a price as the better shaped varieties. Of the new varieties, Di Vernon and Catriona, while cropping fairly well, are considered undesirable market varieties on account of the purple colour in the skins, and the variety America is not likely to be popular owing to its bad shape.

National Sweet Pea Society's Trials.—The Secretary of the National Sweet Pea Society asks us to remind raisers that those who desire to include their novelties in the Trials for 1925, which are to be held at the Syon House Gardens, Brentford, should forward the seeds at an early date addressed to Mr. A. C. Bartlett, 318, Kew Road, Kew.

East Malling Research Station.—The *Annual Report*[*] to hand indicates the vast amount of important work which is being conducted at the East Malling Research Station by Mr. R. G. Hatton and his excellent staff. The publication consists of three sections and covers 138 octavo pages. In the first section the general developments and activities at East Malling are epitomised, and from these we gather that of a sum of £2,800 needed in order to earn the grants promised from the Development Fund for the completion of much needed buildings, only £600 remained to be raised at the end of last year. The need for further assistance and additional members of the staff is emphasised in the following paragraph: "Even our closest supporters do not fully realise what the keeping of individual tree and bush records entails. After the first three or four years, measurements of growth alone may amount to as many as 120 entries per tree. In the realm of field experimentation it is only by weighing up such statistical records on a considerable number of trees that it is possible to give an accurate indication of the results of any treatments that may be under trial. Such records are actually being kept on the Station alone for some 4,000 trees, which increase the obligation annually at compound interest. If this most valuable side of the work is to be maintained, some permanent additions to the recording Staff will be essential." Section II continues the descriptions of the farm and the manner in which it is laid out in experiments. The issue under notice contains a detailed plan and guide to the original twenty-three acres known as the Great East Field. Section III gives a summary and report of progress concerning individual items in the general programme of work, and it includes contributions on Root Stock Investigations in Relation to Tree Fruits; Manuring of Apples; Crown Gall; Resistance of various Apple Stocks to attacks of Certain Insect Pests; Some Problems of Propagation (in relation to fruit trees); Some Factors Influencing Root Development—fully illustrated by reproductions from photographs; Fungicidal Spraying of Apples; Control of Big Bud Mite; Raspberry Investigations, and Raspberry Mosaic. The *Report* is full of information of the utmost importance to fruit growers and especially to those who cultivate fruit for market, and who should place it among their books of reference and see that each annual issue is added as it appears.

---

[*] "How long do the Various Seed Species retain their Germinating Power?" Investigations made at the Danish Seed testing Station in 1891, 1903 and 1920, by Dorph-Petersen. *International Review of Agriculture*, New Series, Vol. II., No. 2, April-June, 1924.

[*] *Annual Report*, 1923. East Malling Research Station, East Malling, Kent. The Kent Incorporated Society for Promoting Experiments in Horticulture, East Malling Kent. Price to non-subscribers, 3s. 4d., post free.

Presentation of Fruit to the Lord Mayor of London.—The Worshipful Company of Fruiterers will make the annual presentation of fruit to the Lord Mayor of London on Thursday evening, October 9th at the Mansion House. The Master, Wardens, and Court will be entertained at dinner afterwards.

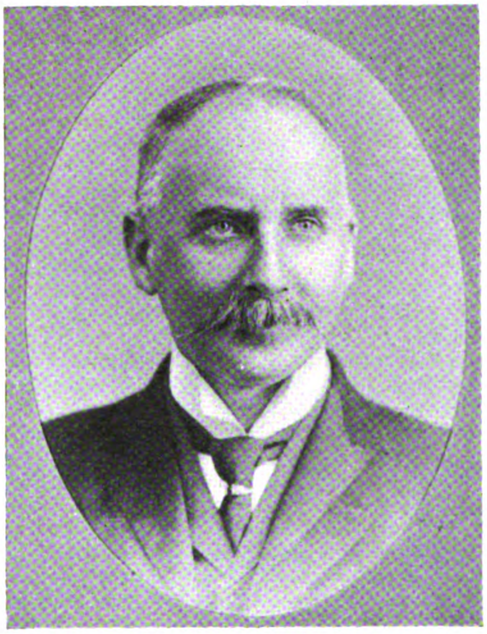
New Wheat Yeoman II.—Two thousand five hundred quarters of the new Wheat Yeoman II are being offered for sale this autumn by the Council of the National Institute of Agricultural Botany. This new variety was bred by Prof. R H. Biffin of the Cambridge University Plant Breeding Institute and its parents are the varieties Browick and Red Fife. Although in the matter of yield it is approximately equal to the old Yeoman Wheat, it is regarded as far superior to that variety for milling purposes. The seed will not be sold direct to farmers, but be supplied only through the seed trade.

Trees as Aerials for Wireless.—We read in the daily press that two forest rangers in the State of Washington have discovered that Firs and the Hemlock Spruce may easily be made to act as aerials for the transmission of wireless messages. The story goes that, tired of carrying wire, these forest rangers in the Washington preserve, by way of experiment, drove a copper nail into the base of the trunk of a Coniferous tree, connected it with their radio sender and started every twig and leaf sending wireless waves, by which means messages are said to have been received two or three miles away. We await with interest the result of further experiments which, it is reported, are being conducted.

United Horticultural Benefit and Provident Society.—It is with very great pleasure we are able to announce that Sir William Lawrence, of Burford Lodge, Dorking, has consented to be the patron of the United Horticultural Benefit and Provident Society in succession to the late Sir Harry Veitch. Our readers will remember that Sir William presided at the annual dinner of the United Horticultural Benefit and Provident Society last year. It is also with much pleasure that we learn that Lionel de Rothschild, Esq., has consented to preside at the annual dinner of the Society, to be held at the Imperial Hotel, Russell Square, on Thursday, November 6th.

Midland Agricultural and Dairy College.—We learn that the session opened at the Midland Agricultural and Dairy College on Monday last with a full complement of students at both Kingston and Sutton, there being about one hundred against seventy-six last year. Of these students twenty have been awarded Scholarships by the Ministry of Agriculture under the Scholarship Scheme for sons and daughters of rural workers; many others have been awarded Scholarships by the respective County Councils in the area served by the College.

Mr. T. R. Hayes.—Born at Grasmere, and coming from a stock which has produced good gardeners for several generations, it is small wonder that Mr. T. R. Hayes has himself become a famous gardener and a leading exponent of the art of designing and planning rock gardens. Heredity and environment have assisted personal inclination which, coupled with abundant energy, have made great achievements possible. Mr. Hayes has also studied deeply and widely, and his frequent visits to the Swiss, Italian, and French Alps have contributed largely to his knowledge of alpine plants and enabled him to add that touch of realism which makes his rock gardens so convincingly attractive. Mr. Hayes served at Birmingham before he commenced business at Lake Road, Keswick, some thirty-four years ago, and now his nurseries are as much a delight as are the rock gardens he exhibits or designs for his customers. He is a keen student of British botany, and his lecture on "The Mountain Flora of the Wordsworth Country" is evidence of his great interest in the natural flora of the district. This is not the place in which to enumerate Mr. Hayes' many successes as an exhibitor of rock gardens—the details have appeared in these pages for many years—but it may be again stated that his firm won a coveted award at the great Ghent Show held in 1923, so that his fame has gone beyond the confines of the British Isles. During the war, Mr. Hayes organised funds for the provision of comforts for wounded soldiers and sailors and for the provision of Christmas parcels for local men who were serving abroad, and one of the means whereby he obtained funds for this purpose was the institution of White Heather days. For many years Mr. Hayes has been a member of the Keswick Urban District Conncil and was its chairman in 1916, and as he is a staunch supporter of the Crosthwaite Church, it will be gathered that notwithstanding the claims of business he does not shirk the responsibilities attaching to local affairs. It is a pleasure to state that the Hayes' succession seems in no way likely to fail, for Mr. T. R. Hayes has two sons associated with him in the business, and they inherit their father's skill and enthusiasm.



MR. T. R. HAYES.

A Record Rattan.—In a series of coils across the front of the Sarawak pavilion at the British Empire Exhibition, Wembley, there is shown what is claimed to be the longest stem of the Cane Palm ever cut. It measures 599 feet, without the top shoot. There has been a mild Rattan competition between Malay and Sarawak at the exhibition. A very long stem was wound, rope fashion, around some of the trees outside the building by Sarawak. It was then realised that Malay exhibited a length of 540 feet, so a cable was sent to Sarawak urgently demanding a still larger stem, with the result above stated. The Rattans, of which many sorts are to be seen at Wembley, are species of Calamus: these are also exhibited inside the buildings with illustrations of their uses. Previously, the longest Rattan stem in this country was the specimen at No. 2 Museum, Kew, which coiled four times around the gallery, measuring 369 feet.

Chrysanthemums at Wembley.—Many visitors to the British Empire Exhibition, have during the past few weeks, greatly admired the splendid autumn-flowering Chrysanthemums in the gardens attached to India's Palace. Certain members of the National Chrysanthemum Society have presented batches of pot-grown plants in order that the general public may have an opportunity of realising the great beauty and decorative value of the newer types. Messrs. Lowe and Shawyer sent a large number of plants of Delight, a lovely pink variety; Candida, probably the best white now in season, and the richly coloured Hollicot Yellow. The contribution of Messrs. Cragg, Harrison and Cragg consisted of fifty large plants of the golden bronze variety, Ianthe, while Mr. H. J. Jones sent plants of the brilliantly coloured Dick Barnes, Goldfinder and Bronze Massé. These plants have been plunged into various flower beds where they add materially to the beautiful gardens in front of the Palace of India.

Conditions of Apple Transport.—The report of the Committee of the Privy Council for Scientific and Industrial Research for the year 1923-24 has recently been issued and contains reference to the work of the Food Investigation Board, the principal event being the one concerned with the sending of a small scientific expedition to Australia to study the conditions of Apple transport to this country. The composition of the atmosphere, the humidity, etc., obtaining in the hold of a ship carrying Apples were carefully studied and records obtained, while it was also the duty of the expedition to test various types of instruments for measuring temperature and humidity so as to provide a critical estimate of their suitability for use at sea. The work of the Fruit and Vegetables Committee of the Board is also mentioned and great importance is attached to the commercial storage trials which are being conducted under rigorously controlled conditions.

"Eat more Fruit" Campaign.—The "Eat More Fruit" Campaign which has been conducted throughout the year by the Fruit Trades' Federation has evidently been highly successful judging from the report of the first year's work recently circulated. The whole aim of the campaign has been to induce people to cultivate the habit of eating fruit. By the aid of attractive advertisements in newspapers, and periodicals, together with artistic display-posters, the demand for such fruits as Apples, Pears, Grapes, Oranges and Lemons has been considerably influenced. Fruit-brokers, shippers, wholesalers, and retailers throughout the country all speak in high praise of the campaign which, we believe, is to be renewed on an even more extensive scale. By this means, the report states, it is hoped to make "Great Britain, which to-day consumes less fruit per head than Iceland, the greatest fruit-eating nation of the world."

Gift of a Park.—Mr. Anthony Waterer, the well-known nurseryman, who died in his 74th year, left £72,165, the net personality being £41,655. Amongst his many bequests the testator gave the Blue Gates Field, about fourteen-and-a-half acres in extent, to the Woking and Horsell Urban Council for a public park or recreation ground, to be known as "The Anthony Waterer Recreation Ground." He also bequeathed £750 to the Gardeners' Benevolent Institution, £1,000 to the Royal Gardeners' Orphan Fund, and £500 to the Royal Agricultural Benevolent Institution, while many of the Surrey hospitals and homes also benefit from his will.

Conference on New Apples and Pears.—On the occasion of the Royal Horticultural Society's Fruit and Vegetable Show to be held at Vincent Square on October 7 and 8, an informal Conference on New Apples and Pears will be held in the Lecture Room at 3 p.m. on October 7. It is hoped that those who are interested in fruit growing will attend and bring interesting specimens with them.

National Potato Exhibition.—Arrangements have been made for the National Potato Exhibition to be held this year at the Junior Training Hall, Leicester, on November 13, 14, and 15, in conjunction with the Annual Horticultural Exhibition of the County of Leicester Education Committee and the Leicester and Leicestershire Chrysanthemum Society. Copies of the schedule and any further particulars required may be obtained upon application to the Organising Secretary, W. H. Morter, Cannon Hill Park, Birmingham.

Appointments for the Ensuing Week.—Sunday, October 5: Wakefield and Northern Tulip Society's meeting. Monday, October 6: National Chrysanthemum Society's Floral meeting. Tuesday, October 7: Royal Horticultural Society's Committees meet (two days); Croydon and District Horticultural Society's meeting; Royal Caledonian Horticultural Society's meeting. Wednesday, October 8: East Anglian Horticultural Society's meeting; Sheffield Chrysanthemum Society's meeting; Wimbledon Gardeners' Mutual Improvement Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Dr. J. Hooker and Mr. Fortune.*—The many friends of Dr. Joseph Hooker will rejoice to know that the last Indian mail has brought intelligence of his perfect safety amidst the dangers of his adventurous journey. On July 5 he was encamped in a fine country, in the Sikkim Himalaya, where the ground was carpeted with splendid plants. The rains were incessant, food scarce, and the Bhoteeas troublesome; the bridges between his camp and Darjeeling had been swept away by the floods, and communications could only be maintained by a most circuitous route. His collections will prove of the highest interest. Among other things, his Rhododendrons amounted to at least thirty species, many of which are much finer than those already published; no botanist had previously ventured to attempt the examination of the Rhodedendron region east of Kamaon, an operation surrounded with most serious difficulties, for these plants can only be studied during the rains. He had also found a magnificent Rose, with scarlet flowers larger than the palm of a man's hand, and crowds of other remarkable species. The same mail has also brought letters from Mr. Fortune, dated Shanghae, July 12. He had made very large collections of Tea plants from the East India Company, from the famous Woo-e-san district, as well as from the green-Tea country of Wheychow. The plants already sent by him to Calcutta are reported to have arrived in excellent order, and had been forwarded by Dr. Falconer to the N.-W. provinces. *Gard. Chron., October 6, 1849.*

THE DECORATIVE DAHLIA.

The present season is likely to create a far greater interest than ever in the Dahlia. Considered from a purely garden point of view, the first thought in this connection is the encouragement of varieties with suitable flower-stems. Whatever the claims of the elegant forms of the Cactus varieties may be from an exhibition outlook, these have, on the whole, ceased to please for purposes of garden decoration because they possess stems which do not hold up the flowers unless artificially supported.

Decorative Dahlias may retain such subdistinction as Paeony-flowered, miniature-Paeony, Camellia-shaped, Collerette, Single, or Star; nevertheless their chief attraction lies in their usefulness for display, or for cutting to supply room decorations. Just now efforts are being made by The National Dahlia Society to show that there are varieties in existence that are most commendable for effective displays in vases and bowls and the leading London florists have been encouraged to make window displays of the flower throughout the autumn. This appears to be a splendid move, for it is most desirable that cultivators not acquainted with modern varieties should be able to see them. A great deal, too, is being done to popularise the Dahlia by the displays in the parks, both in London and the provinces, which have proved very attractive to the public taste.

It is a pity that what few Dahlias are grown for market are, for the main part, inferior sorts; such ancient varieties as Henry Patrick and Glare of the Garden are not infrequently seen. Surely commercial growers could find something better than these to give reward for their labour! The Dahlia trials at Wisley afford the best means of judging the qualities of the modern varieties, for every year the varieties selected by the Joint Dahlia Committee are grown in the trial grounds and finally judged in their growing state. The plants do not receive any especial treatment and a variety that safely passes so severe a test is bound to be valuable.

The following varieties approach the ideal:—Dazzle, Our Annie, Trixie, Gracie Goddard, Vida, Fedora, Crimson Flag, Psyche, J. Van Tets, Tuskar, Delice, Tipsy, Seafield and Brentwood Star; these are all first-rate, but this selection could, of course, be extended. Most of those mentioned bear flowers of medium size, useful when cut and also attractive in the garden.

The habit of the Dahlia is undoubtedly undergoing a change for the better, and in a very short time the tall growing sorts will be ousted by those of medium height. It will, indeed, be an advantage to dispense with the generally unsightly and tiresome tasks of staking and tying.

Recent work in the raising of new varieties concerns the interbreeding of the best of the Dutch types with choice Cactus varieties.

In later years Decorative Dahlias have been greatly improved in the quality and texture of the florets; this is well, because taste in the past has been directed towards the fragile Cactus varieties which soon lose their freshness when cut. There is every indication that the Dahlia is rapidly regaining its popularity both as a cut flower and for garden decoration. It is in the growers' power to see that this interest is not only retained but still further encouraged. *H. S., Woking.*

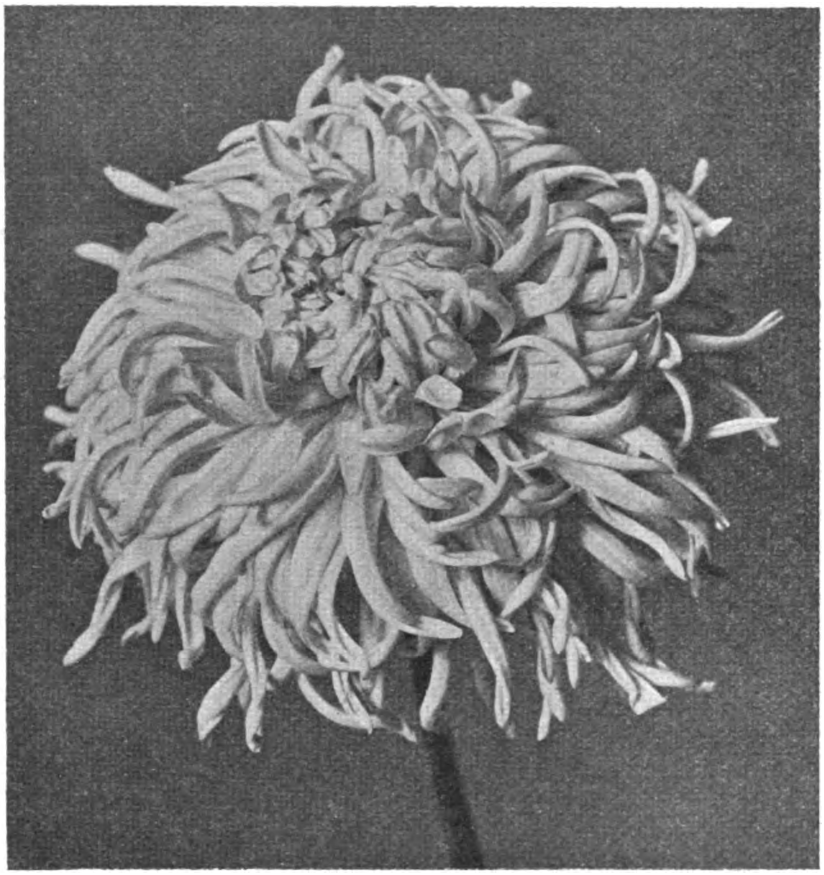


FIG. 82.—CHRYSANTHEMUM LICHFIELD PEACH.

Flowers peach-pink. R.H.S. Award of Merit, September 23 (see p. 220).

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Lycaste.—Lycaste Skinneri, and its many varieties, together with L. cruenta, L. leucantha, L. Deppei and a few others are now completing their season's growth and are forming a quantity of fresh roots. They will still require a rather liberal supply of water until the new pseudo-bulbs are fully developed, after which the quantity should be reduced. These plants thrive well in the cool house, but it is advisable to keep the immediate surroundings rather drier during the winter to guard against the foliage being disfigured with spot disease.

Trichopilia.—These interesting plants flower at various times during the year, and for that reason repotting should be carried out at intervals, just when the young roots appear at the base of the new pseudo-bulbs. T. suavis is the handsomest of the species and the most frequently grown; but T. fragrans, T. coccinea, T. tortilis and T. sanguinolenta, are all worthy of cultivation. Most of the Trichopilias grow best in rather deep Orchid-pans suspended near to the roof glass in an intermediate temperature, but T. fragrans thrives best when placed on the stage in the cool house.

Thunia.—These plants will still be retaining their foliage, and through being kept in a dry atmosphere and full sunlight they are subjected to attacks of red spider. As a preventive it is a good plan to lay the plants down and well syringe the stems and the undersides of the leaves with a strong solution of soft-soap and warm water. Allow the solution to remain on till quite dry, when they should be syringed with clear, tepid rain water. After the leaves have fallen, the plants may be placed in a dry, cool place, keeping them quite dry at the roots until growth recommences.

Dendrobium.—Plants that have completed their growth should be thoroughly cleansed and placed in their resting quarters where they should receive all the light possible and only sufficient water to prevent them from shrivelling. Any specimens that have started to make secondary growth should be given a light position in the warmest house until it is completed before being rested.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Transplanting Evergreens.—In laying-out or re-modelling a garden, the disposition of evergreen trees and shrubs is of great importance, and it is sometimes an advantage to plant them before the winter. Where it is considered desirable the operation may be performed at the present time, but unless the work can be finished by the beginning of October it is much better to defer it until the spring. It must be borne in mind that the root-system of evergreens is never quite so inactive as that of the deciduous trees and shrubs, as, although actual growth may not take place in winter, there is a constant demand on the roots for moisture due to transpiration from the leaves. It is obvious that transplanting cannot be carried out without robbing the plant of some of its active roots, and in transplanting evergreens in autumn it is essential that the work should be done sufficiently early to enable new root tips to be made, or this demand for moisture cannot be met and the plant must inevitably suffer.

Dry Walls.—Although a dry wall may be built at almost any time of the year, provided strong, well-rooted plants in small pots are available, there is no better time than the present for carrying out the work. It is essential that the wall should be planted as the building proceeds, pressing the plants between the stones as they are laid and filling the interstices with good compost to enable the young plants to establish themselves quickly. The stone should be slightly sloping inwards from the base as this facilitates the retention of moisture and helps to keep the soil in position. A system of grouping the plants should be adopted, the number of specimens in the group depending somewhat on the area of the wall, and the early, midseason and late-flowering varieties should be intermixed to give a more or less uniform display throughout the season along the whole length of the wall. The following will be found a useful collection of plants which will provide a continuous display:—Acaena adsurgens, A. microphylla, Alyssum saxatile and varieties, single and double Arabis, Achillea tomentosa, Aubrietias in variety, Androsace lanuginosa, Arenaria balearica, A. montana, Campanula carpatica, C. caespitosa, C. garganica, C. muralis, C. pusilla, Cheiranthus Allionii, Dianthus caesius, D. deltoides, D. dependens, D. neglectus, Erinus alpinus, Erysimum pulchellum, Gypsophila muralis, G. prostrata, Heuchera sanguinea, Hippocrepis comosa, Helianthemums in variety, Iberis gibraltarica, I. corraefolia, Linum flavum, Phlox setacea and varieties, Saxifragas, Sedums and Sempervivums in variety, Lithospermum prostratum, Plumbago Larpentae, Veronica rupestris, V. prostrata, Zauschneria californica and Z. splendens.

General Remarks.—October ushers in the autumn which brings its multiplication of duties. In many respects it is the beginning of the gardening year, and certainly it should be the chief season of planting for there is scarcely anything in the nature of planting or replanting that cannot be undertaken in October. The smaller bulbs will be already planted; if not finished they should be placed into position without further delay. Many others now claim our attention such as Narcissus, Hyacinths, Tulips, Wood Anemones, Alliums, Fritillarias, Iris, &c., all of which should be planted as soon as circumstances permit.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Cinerarias.—Plants which have not received their final potting should be transferred to their flowering pots during this month, excepting perhaps any late-sown seedlings set aside for spring flowering. Pots of six inches diameter should be large enough, and a compost comprising light loam, three parts; leaf-soil, one part, and old hot-bed manure, one part, with the addition of sand, a little fine charcoal and a sprinkling of Clays' Fertiliser will be suitable. After potting, place the plants on ashes in a cool frame or pit, and keep the structure rather close until the plants have recovered from the check of potting. Cool frame treatment should be afforded the plants so long as possible into the winter, relying upon fire heat only to exclude frost.

Herbaceous Calceolarias.—It is advisable to establish these plants in their flowering pots during this month, using a light, rich, open compost and well-drained pots. When potting the operator should be careful only to barely cover the old ball with the new soil, or losses will result. The coolest possible treatment should be afforded them, but cold draughts should be avoided. In order to keep them free from the attacks of aphis it is well to lightly fumigate the plants frequently. Keep a sharp look-out for slugs, which will quickly ruin a batch of these plants.

Begonias.—Plants of Gloire de Lorraine and its hybrids should receive every encouragement towards making clean and healthy growth. A position near to the glass in a low-roofed house (if available) should be utilised, keeping the atmosphere moist and maintaining a temperature of 65° to 70°. Remove all flowers for the present and feed the specimens frequently with weak, warmed, liquid manure and soot water.

Propagation.—Many of the late occupants of the greenhouse and stove, such as Coleus, Acalyphas, Abutilons, etc., may now be discarded so soon as cuttings have been selected. Cuttings of Fuchsias, which were rooted last month, will make good specimen plants by next summer if they are grown on steadily through the winter.

FRUITS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Late Vinery.—All late Grapes should have finished colouring by this date, and where the bunches are to remain on the vines until quite late in the year, careful attention must be given both with regard to the watering and ventilation of the vinery. Although the vines must never suffer through lack of moisture at the roots they must receive sufficient water to keep the berries from shrivelling. When watering the borders it is important to see that the outside conditions are dry and that the water is applied as early in the day as possible. The top ventilators should be opened to allow the atmospheric moisture to escape. Admit air both during the day and night, and in dull weather it is wise to dry the atmosphere by using a little fire heat. The bunches should be examined occasionally for decayed berries, for if these are allowed to remain they will contaminate others and the bunch will soon be spoilt. Robins are very troublesome in some seasons, and if means are not taken to keep them at bay by fixing a small-mesh net over the ventilators, they will cause a considerable amount of damage in a very short time.

Peaches and Nectarines.—Where space is limited for the indoor cultivation of Peaches and Nectarines it is a good plan to obtain a succession in the early house until such time as those that are grown under cooler conditions are ready for use. The following varieties of Peaches and Nectarines will provide a succession in the order placed and are most reliable for early forcing:—Duke of York, Hale's Early and Peregrine Peaches, and Cardinal, Lord Napier and Pineapple Nectarines. The later house should be planted with an early variety, such as Hale's Early, Violette Hative, Dymond and Bellgarde Peaches, and Early Rivers, Lord Napier and Humboldt Nectaries. This selection, of course, is for small growers; there are other good varieties of excellent flavour but the above are the most reliable and easily cultivated.

HARDY FRUIT GARDEN.

By R. W. THATCHER, Gardener to MARK FIRTH, Esq., Carlton Park, Market Harborough, Leicestershire.

Ordering New Trees.—If new trees are required no time should be lost in placing the order with the nurseryman. Deal only with a reputable firm as nothing is more annoying to a fruit-grower to find, after the trouble of well preparing the site, that the trees are of some unsuitable variety. Cheap trees from unknown vendors should be avoided at all costs.

Preparation for Planting.—Old, worn-out trees should be cut down, and the roots taken up some time this month. The ground may then be trenched and left rough till the new trees arrive, when, providing the weather is open and the soil in a suitable condition, they should be planted without delay. Some good, thick turf cut from an old pasture should be in readiness to use, as where trees have stood for a number of years the soil is generally in an impoverished condition. Coarse bone meal and wood ashes will be found very beneficial to the new trees, and some of each should be incorporated in the new soil. In the case of stone fruits plenty of old mortar-rubble should be mixed with the soil to provide the necessary lime. On no account use farmyard manure when planting new trees; the need for this will arise in time when the specimens have been well cropped and are in need of a stimulant.

Orchards.—When planting a new orchard in which animals are likely to be turned out, recourse must be had to tall standard trees, but where this is not so it is advisable to plant half-standards and bushes alternately. Not only are these, especially in the case of Apples, Pears or Plums, much easier to manage, but they are not so liable to be blown down by strong winds, and should the orchard be in an exposed position, this is a great consideration. Allow plenty of room between the trees.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Onions.—If not already done, the Onion crop should now be lifted and the bulbs ripened off in a dry, well ventilated vinery or greenhouse. The bulbs must be carefully examined from time to time and all unsound specimens should be used at once. Pickling Onions should be ripened off in the same manner.

Early Rhubarb.—The leaves are now rapidly dying down on early plants and the strongest crowns should be marked for forcing. They may be lifted and laid in a cool, shady place, for when so treated the plants quickly respond to forcing conditions.

Seed Potatos.—Seed tubers which were set aside for greening should now be placed under cover in case of frost. Label each variety correctly and remove all imperfect tubers.

Cucumbers.—Plants in frames will now require less water at the roots. Pinch out all growing points, or if the growths are removed sufficiently long they may be inserted in small pots and rooted in bottom heat. Such plants will furnish a late crop of Cucumbers provided plenty of heat is available.

Sea Kale.—So soon as the foliage dies down strong crowns should be selected for forcing. Remove the bottom roots so as to leave the forcing crown a suitable length. The "thongs" should be cleaned and trimmed into suitable lengths and placed in ashes for the time being

Tomatos.—The outdoor crop should now be harvested as there is very little chance of the fruits ripening naturally. It is a good plan to cut off the trusses and hang them on the wire-trelisses of a dry, airy greenhouse to ripen. This is a suitable time for using the green Tomatos for jam or chutney or pickles.

Early Cabbages.—The early planted crop must be kept free from weeds by hoeing on all favourable occasions. Continue to plant another batch for a successional crop. A small, south border to be utilised for early Cabbages, Brussels Sprouts, Red Cabbages and Lettuces should be prepared for early planting in the spring.

PLANTS NEW OR NOTEWORTHY.

SCHIZOPHRAGMA INTEGRIFOLIA.

Amongst the striking plants that have flowered this year at the Verriéres Arboretum, near Paris, Schizophragma integrifolia stands out conspicuously. A specimen trained against a wall and measuring twelve feet wide by eight feet high was a fine sight in June, and one not easily forgettable. The large bracts—surpassing by a long way in size and beauty any others known in the genus and in the closely allied genus Hydrangea—measure, when fully developed, three inches in length and two inches in width. They are of a creamy-white colour, contrasting very finely with the handsome, large-sized, deep green leaves. They last for a long time and attract the attention of visitors from a considerable distance. The wind helps to make the bracts conspicuous by waving them.

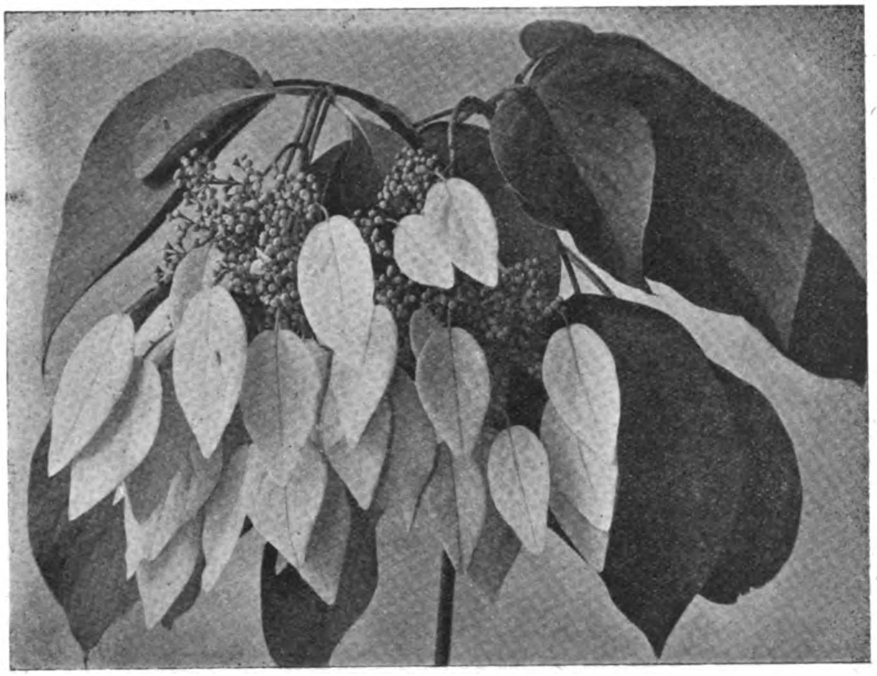


FIG. 83.—SCHIZOPHRAGMA INTEGRIFOLIA.

It is quite surprising that this shrub sent out by Messrs. Veitch so long as fifteen years or so ago, and raised from seeds collected by Mr. E. H. Wilson in China, is still comparatively rare in gardens. It is certainly one of the most showy climbers, as the photograph here reproduced (Fig. 83) shows, and a grand future should await it.

As with all species of Schizophragma and climbing Hydrangeas, Schizophragma integrifolia prefers a rather semi-shaded and cool position where, however, it is perhaps a little shy in flowering during certain years. Propagation is easily effected by layering and no seeds are produced as a rule under northern climates. *C. L., Paris.*

HARDY FLOWER BORDER.

AUTUMN FLOWERS.

In my note on some of the less common and more desirable autumn flowers (page 195) I omitted one which is specially worthy of mention, namely, Hydrangea villosa. It is, I believe, one of Forrest's discoveries in China, and has not yet become widely known; but those who have seen the mass of it in Mr. McDouall's garden at Logan must have been charmed with its beauty. It grows six to eight feet high; the leaves are as many inches long, linear-lanceolate and softly hairy. The broad corymbs of flowers are freely produced, the sterile florets varying on different bushes from pink to violet and light blue. Whether this species is hardy in all parts of our country remains to be proved, but it has shown no flinching from frost on the west coast. *Herbert Maxwell, Monreith.*

SIDALCEA SUSSEX BEAUTY.

For late blooming, as well as for its intrinsic beauty, Sidalcea Sussex Beauty deserves to take a prominent place amongst our herbaceous plants. Recent years have given us valuable additions to the Sidalceas, at one time quite limited in number in our gardens.

Given a good soil, Sidalcea Sussex Beauty grows from three to four feet, or even more in height, and bears on its stately stems a number of good-sized flowers of a most charming satin-pink. It is, as yet, rare in commerce, but promises to become a favourite.

POTERIUM OBTUSUM.

A few of the Poteriums are deserving of the notice of those interested in hardy plants, but none of them is equal to the charming P. obtusum, from Japan. It is of comparatively recent introduction, and does not receive notice in many of the gardening books of reference. Nevertheless, it has already found great favour and is listed by most dealers in hardy plants—a good mark of the favour enjoyed by a new plant. It belongs to the Natural Order Rosaceae, and has in its foliage a good deal of the character we find in most plants of this vast family. Although possessing quite elegant foliage, it is not until it flowers and gives us its rather blunt heads of fine rosy hue that we appreciate to the full the inherent charm of this plant.

It is already finding high favour for planting in herbaceous borders, where in autumn it affords a charming contrast to most of the other plants cultivated for their flowers; but I think it is even finer in the wild garden, where a good group in bloom is very effective. *S. Arnott.*

THE ROSE GARDEN.

ROSES FOR ARCHES.

ALL climbing varieties of Roses are not suitable for arches, many sorts being but pillar subjects only. To clothe an arch it is necessary to plant varieties that make long growths sufficient to arch over the top after the height of the upright has been reached. The arch may be made of any reasonable height, but eight feet is most suitable—certainly it should not be less than seven—while eight feet is not too much to allow for width, and eighteen inches to three feet will provide a range of width for an overhead framework that will suffice for small or big gardens.

Concerning varieties, I venture to name a dozen that I have proved will fulfil the requirements of such arches:—American Pillar, bright pink, single flowers borne in large clusters; Blush Rambler, blush pink, flowers in most freely borne clusters; Dorothy Perkins, the well-known pink variety; Excelsa, a good crimson double sort; Félicité-et-Perpétue, small, creamy-white flowers; Gardenia, bright apricot-yellow paling to creamy and white on expansion; Hiawatha, small crimson flowers with a white eye; Lady Gay, somewhat similar to Dorothy Perkins, but the flowers are larger and of a deeper shade of pink; Lady Godiva, one of the best of all climbing Roses, with flowers of a lovely pale flesh-pink colour; René André, saffron-yellow shaded red; Una, single, creamy-white in full flower, in the bud stage yellow, a very thorny plant; and White Dorothy.

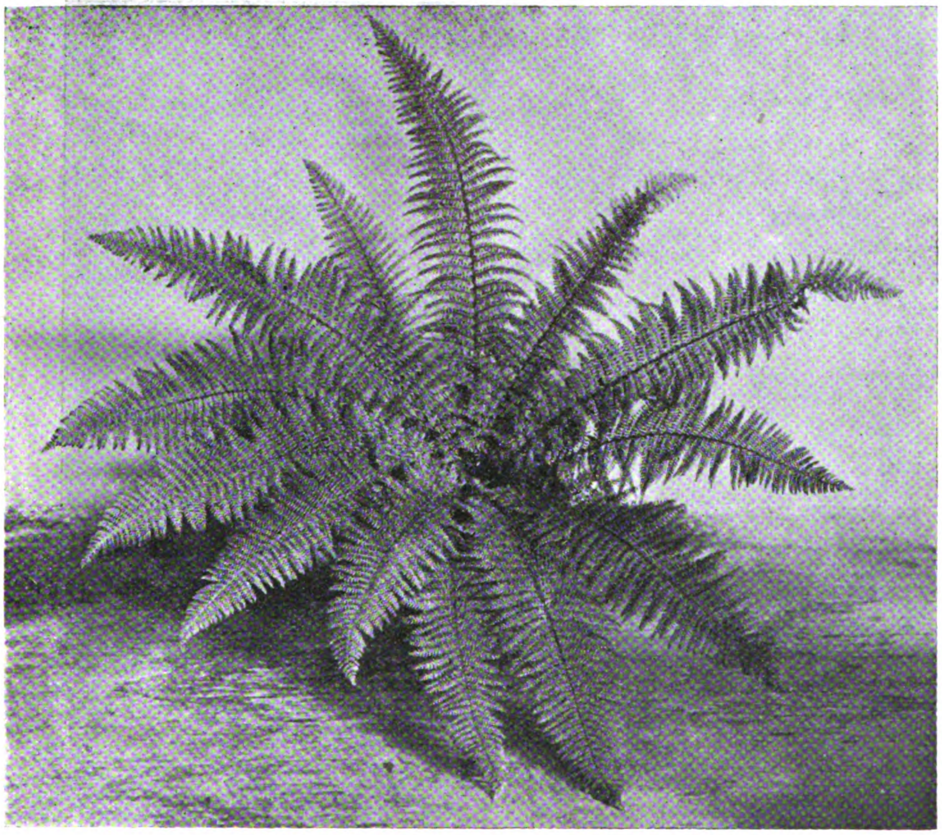


FIG. 84.—POLYSTICHUM ANGULARE DIVISILOBUM NITESCENS GRANDE.

R.H.S. Award of Merit, September 22 (see p. 219).

The foregoing constitute a selection of early and late bloomers, and where a series of arches exist planting of these, or a similar selection, should be alternately done so as to better distribute the flowers over the garden occupied by the arches.

These tall, rampant growing Roses are not so fastidious in their requirements as are the Roses of the dwarf section. The soil should be drained if in any way inclined to be waterlogged. Very light land should be made heavier by the addition of stiff loam. Holes about two feet deep and the same square will suffice for planting, and decayed farmyard manure and one-inch bones should be mixed with the bottom layer of soil.

Planting may be done at any time when it is not frosty, from October to March—the best periods being during November and from mid-February to the middle of March. Immediately before planting the roots dip them in water unless they are already moist. Cut back injured roots to sound wood, and shorten all strong roots. When the latter are placed in position cover them with the driest soil first and make the ground firm as the work of filling in the hole is proceeded with.

The pruning and training of these newly planted Roses is of a simple character for the first season or so. All growers do not adopt the same method, but my practice is to remove all the lesser growths entirely, then shorten to varying lengths two or three of the best shoots—according to the number to be dealt with. By this system a partial masking of the uprights of the arches is secured the first season, and I have found this plan to give complete satisfaction. I am aware that some planters cut back the whole plant to within one foot or eighteen inches of the ground the first year, but this is quite unnecessary for these hardy Roses, and when treated as suggested above one reaps the advantage of the earlier furnishing. Should frost effects be feared the first season tie straw lengthways round the growths and all will be well.

With established plants pruning should be done so soon after flowering as convenient, thinning out crowded and useless wood and cutting away, occasionally, the oldest growths—this practice encouraging the throwing up of new shoots and allowing the free passage of air and light. Supplement this pruning with a slight tipping of the growths affected by frost in early spring

Upon the method of training much of the charm and beauty of an arch of Roses depends. To tie in the growths tightly or bunch them together is unnatural. But beautiful effects will be produced where the shoots are arranged loosely, allowing some short side shoots on the upright pillars and some on the top cross woods to depend in a natural manner.

In dry seasons watering will need much attention, particularly on light ground, while a certain amount of feeding will be good on all except the best of soils. These duties are best carried out when the buds are forming and swelling, and feeding may be either with a concentrated soluble fertiliser or liquid manure. An alternative method is to mulch the roots with decayed manure, and this is an excellent practice during a hot season, while it is also beneficial to the plants after flowering profusely.

Doubtless there are plenty of Roses on arches that never receive this assistance and yet give quite a good return of bloom—in fact I have known of such instances, but these cases do not prove that more liberal treatment will fail to produce better results in vigorous growth and freedom of flowering, for the latter cannot be had without the former. *C. Turner, Ampthill Park Gardens.*

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

HUNNEMANNIA FUMARIAEFOLIA.

THIS beautiful Californian Poppywort is generally classed as a biennial, but is usually treated as a hardy annual. Its finely cut, glaucous foliage and beautiful yellow flowers are very attractive, and it is surprising that the plant is not more generally cultivated. Grown in pots it is well suited for the small, unheated greenhouse. About the middle of September seeds should be sown directly into 48-sized pots, in which the plants may be flowered. It is advisable to thin the seedlings to five or six in a pot, as this Hunnemannia is more likely to be successful if not transplanted. True, it may be transplanted, but very skilful and careful treatment is necessary to success.

As with most Californian plants of this class, the chief enemy of H. fumariaefolia during winter is damp, and for this reason it is best wintered in a cool, dry, airy greenhouse, keeping the plants well up to the roof glass. Excess of moisture at the roots must be guarded against. If necessary another sowing may be made early in the new year.

IBERIS CORONARIA.

Candytuft, in several varieties, is very useful for growing in pots. Seeds may be sown in cold frames during the middle of September, and when large enough the seedlings should be pricked off singly into small pots, giving the larger growing varieties a shift into 48-sized pots, in which they should be wintered. Early in the year pot them into six-inch pots, in which they will flower. The dwarf varieties are best flowered in 48-sized pots. Candytufts may be wintered very well in cold frames, if allowed plenty of air on every suitable occasion. They grow freely in any good potting compost, but this should be made fairly firm, as the growth is then more sturdy and compact.

IMPATIENS.

The double-flowered Balsams have always been favourite plants for pot culture. When considering the culture of Impatiens Balsamina it is essential to obtain seeds of a good strain from a reliable source, as good cultivation will not turn a poor variety into a good one. Balsams are very quick-growing plants, and by successional sowings they may be had in flower throughout the summer and autumn. The first sowing should be made in an intermediate house about the beginning of March, and the seeds should be sown very thinly, because the young plants grow so rapidly that, if at all crowded, they soon become drawn and weak. It is also important to prick off the seedlings while they are quite small; they are best placed singly into small pots, inserting them, if possible, right down to the seed leaves, as they will then root out from the stem. Later batches raised during the summer months should be grown perfectly cool, either in cold frames or in a cool greenhouse, as by this means strong, sturdy plants are obtained. When they have well filled their pots with roots, Balsams enjoy plenty of liquid manure.

Impatiens Holstii, in several varieties, may be treated as an annual; a batch of seedlings gives quite a variety of colours, and any special variety may afterwards be increased by means of cuttings.

Seeds should be sown in a warm house during February or March, and when large enough the seedlings should be pricked off singly into small pots, afterwards potting them on as they require it until they are in six-inch pots, in which they should flower. In their younger stages the plants are best grown in an intermediate temperature, but as the season advances and the plants increase in size they will do perfectly well in a cool greenhouse. If liberally fed with liquid manure the plants will grow and flower freely for several months.

Impatiens Sultani may be grown successfully under the same treatment as I. Holstii, both growing freely in any good potting compost.

IONOPSIDIUM ACAULE.

The Violet Cress is a pretty little plant, and although too small for the decoration of the ordinary greenhouse it is very suitable for the alpine house or small unheated greenhouse. Seeds should be sown in a cold frame during September, and the seedlings pricked out when large enough to handle, placing them a few inches apart in shallow pans, in which they should be flowered. They thrive in the shelter of a frame, but should be kept close up to the glass. Beyond careful watering during winter the successful cultivation of this charming little subject presents no difficulty. *J. Coutts.*

BULB GARDEN.

COLCHICUM BORNMUELLERI.

This very beautiful Colchicum, described by Farrer in his *English Rock Garden* as "incomparably the grandest of all our Colchicums," has been in bloom in our woodland garden throughout September. On first appearing, the large and sumptuous blossom is a very pale pink, almost white, but it gradually deepens in colour until the upper halves of the segments are a full rosy-lilac—tending to clear rose in some lights—set-off by a broad base of pure white. These lovely blooms appear in succession over several weeks, often commencing in August, and they are singularly charming in the half-shade and, as we have them, coming through a carpet of Omphalodes verna. *A. T. J.*

ALPINE GARDEN.

KIRENGESHOMA PALMATA.

The mention of Kirengeshoma palmata as occurring in the group of Alpines shown by Messrs. Bowell and Skarratt, in your report of the Holland Park Hall show (see p. 223), tempts me to write a few words in its favour, for apart from being a comparatively rare plant, it is an excellent subject for the embellishment of the rock garden.

It is by no means an easy plant to cultivate, but after many years of patience I have at last been rewarded with a magnificent flowering clump after following the late Mr. Reginald Farrer's advice in his book *The English Rock Garden.* There, he states that it requires "a rich soil in a cool, damp place," and such a spot was found it at the foot of the rock garden, the natural soil being first removed and a good, leafy compost enriched with short, well-decayed farmyard manure set in its place. Previously the plant had been growing, more or less, in full sunlight, in a poor situation, but since its removal to new quarters it has taken a new lease of life and is seemingly in a flourishing state of health. When a suitable site has been found it the plant should not be disturbed, useless the clump becomes too large, when it may be increased by division.

The history of this monotypic genus is well worth again recording. The first description in English appeared in *The Gardeners' Chronicle* (Vol. IX., 1891, p. 202) under the heading of "New or Noteworthy Plants," the brief notes having been made from a description recorded by Dr. Ryokiche Yatobe in the *Botanical Magazine* of Tokyo. At a later date, Mr. W. Watson, in *The Gardeners' Chronicle* (Vol. XXXIV, 1903, p. 187), records the behaviour of a specimen at Kew, where, after raising a single plant from seeds received from Dr. Yatobe in 1891, the Kirengeshoma did not reveal its true characters until twelve years later, when for ten years of its existence it had occupied "a rather moist, sunny position in the rock garden." From this last observation it seems evident that the plant had not been given an ideal site; it is also interesting to note that the summer of 1903 was excessively wet, and evidently, as in this year, the Kirengoshoma enjoyed such moist conditions. The plant at Kew provided the subject of a coloured plate in *The Botanical Magazine,* March 1st, 1904, t. 7,944, where the derivation of the name is given as meaning, literally, "the yellow Anemonopsis macrophylla" from "ki," yellow and "rengeshoma," the Japanese popular name for Anemonopsis macrophylla.

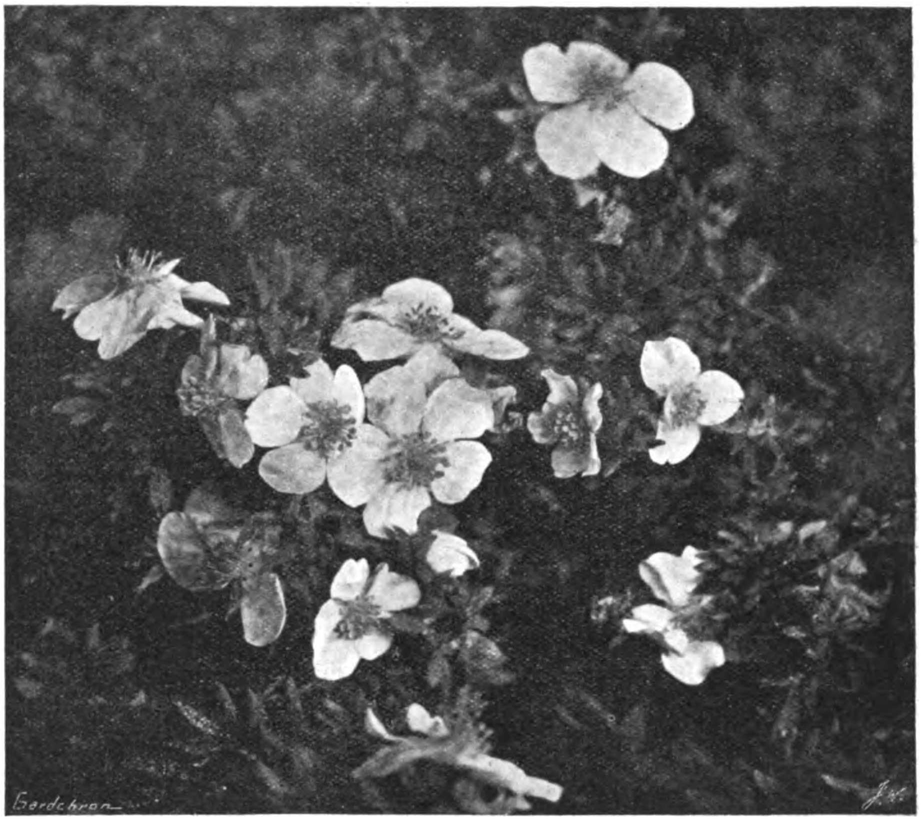


FIG. 85.—POTENTILLA DAHURICA VAR. MANCHURICA.

R.H.S. Award of Merit, September 22 (see p. 219).

It is a native of Mount Ishizuchi, where it was found in 1888 by Dr. Yatobe growing in open woods at an elevation of over 5,000 feet. In appearance the plant is strangely distinct from other members of the Saxifragaceae, to which it belongs. Watson likens the plant to an "ordinary Cineraria with flowers suggesting a Campanula," while Farrer writes that the "noble waxy-yellow flowers, very conspicuous and large, hover in loose clusters at the tops of the stems and are like nothing in the world, except that the weirdness of shape suggests dimly some magnificent or monstrous Impatiens."

To me the flowers resemble a miniature Lapageria. The colour is a very pale yellow —almost deep cream—and certainly not so rich in tone as are depicted in *The Botanical Magazine.* Neither have I seen the flowers opening so widely as in the figure mentioned, for, at least on my specimen, they retain their semi-closed condition throughout, very much the same as does the Lapageria. *R.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden. W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard, 1543.*

GARDEN CRAFT IN THE CANTICLES—VI.

WE now turn our attention to the Orchard. "Thy plants are an orchard of Pomegranates with pleasant fruits," is an instructive phrase (Canticles IV. 13). We have already seen that the word here translated orchard is Paradise. It is sometimes translated by our English word Grove, but in Palestine to-day an orchard or grove of fruit trees is known as a Bayarah. Take the following as a typical illustration of what the modern fruit garden is like, and without doubt you have a picture of the orchard of Pomegranates and other pleasant fruits of olden days. The names Yafa, Jaffa, and Joppa, indicate places of brightness and beauty. But beauty is, in fact, in the eye of the beholder, and some might fail to find charm in these localities. "But," states James Neil, writing of Joppa, the place "is exceedingly beautiful for all that, on account of the glorious groves of Oranges, with mingled Lemons, Sweet Lemons, Citrons, Date-palms, Bananas, Pomegranates, Apricots, Quinces, and all manner of precious and graceful fruit trees that extend for three miles behind and around the little town. The Orange, which forms the principal produce of these rich, semi-tropical *Bayarahs*, or orchards, is a noble evergreen tree which is in full bearing at mid-winter," and yields that most delicious "Apple of Gold," the Jaffa Orange. Another writer, alluding to Shunem, remarks that "a spring here gives a beautiful little bayarah, or orchard, with a hedge of the weird and picturesque Cactus."

I have not at hand for reference Renan's original translation of the *Song of Songs*, but the verse appears in English dress as follows: "A grove where the Pomegranate blossoms together with the most precious fruits." In the Hebrew writings, in addition to the words for Garden (*Gan*), and Park (*Pardes*), we find two words which are rendered in English by Grove. One of these is incorrect, as *Asherim* denotes wooden pillars, either plain or carved, to represent an object of worship. The other word occurs thrice only in the Old Testament. In Genesis XXI, 33, we read that "Abraham planted a grove in Beer-sheba." In the margin the word "tree" takes the place of "grove," and the revisers go so far as to state that the patriarch planted a Tamarisk tree. Since this translation can hardly be challenged, being supported alike by etymology, and by the other two passages where the word Eshel occurs, it follows that there is no real Hebrew word for Grove in the Bible. We are limited then to the terms *Gan*, a Garden, *Pardes*, a Park, and *Bayarah*, the modern name for Orchard or Grove. There is, indeed, another word in Hebrew (*Netag*) which is once rendered "plantation" (Ezekiel XVII, 7). It does not occur in the *Song of Songs*, but will be considered later when we come to the study of flower beds. Though not infrequently found in the Hebrew writings, it nowhere has exactly the sense of a garden, grove or orchard. Reference may be made to Ecclesiastes II, 4, 5, for all these words. Our present concern, however, is with the pleasing fruits grown in the times of the writer of this beautiful song. And we naturally begin with the Pomegranate. It is close upon half a century since I first grew this tree or shrub in an Eastern garden, and well I remember the delight it afforded me in the spring of 1887 when it burst into bloom.

How familiar the poet was with the fruit, as well as with the plant, may be gathered from the twice-used simile: "Thy temples are like a piece of Pomegranate," or as Renan renders it, "Thy cheek is like the one side of a Pomegranate," which having faced the sun is rendered bright and beautiful. It often happens with the fruits which come to us from abroad, as with our own Apples, that the one side is pale or yellow while the other is ruddy. The Hebrew name for Pomegranate was *Rimmon*, which answers to the Arabic *Rumman*. As a wild fruit it is bitter and astringent, but there are two forms in cultivation, the sweet and the sour. They are very similar in appearance, but differ from each other in taste as much as the Orange does from the Lemon. The name by which we know it is suggestive of the hand grenade which was so largely in evidence during the recent war, and for the reason that the grenade, as Skeat reminds us, was so named from its likeness to a Pomegranate (see the Spanish *granado*), being filled with combustibles as that is with seeds. Indeed, in Old French we find the word grenade defined as "a Pomegranate, a ball of wild-fire." The Latin *granatus*, from which the word comes, means "full of seeds or grains," and when we speak of a Grenadier we are recalling the man who flung grenades.

Though the fruit is well known many have never seen the plant. It is a bushy evergreen, seldom exceeding ten feet in height, with lanceolate, glossy leaves, whose greenish-red colour when they are young is in striking contrast with the blue foliage of the Olive; the scarlet or deep orange-coloured blossoms are bell-shaped and they are very conspicuous and beautiful. It flowers from March or April till June; the fruit ripens in July or August, and comes to perfection in September. It has long been under cultivation in Bible lands. The Hebrews were familiar with it in Egypt, and it must have afforded them great delight in the desert when the spies returned from Canaan, bringing from Eshcol's vale not only a cluster of Grapes borne in Eastern fashion on a pole between two bearers, but also Pomegranates and Figs. They were assured that they would find the Promised Land not only flowing with milk and honey, but yielding abundance "of vines, and Fig trees, and Pomegranates." The writer of the Song alludes to the attractions of the orchard or garden (VI, 11) in the words: "I went down into the garden of Nuts to see the green plants of the valley, to see whether the vine budded and the Pomegranates were in flower." Their beauty blending with the delicate perfume of the vine blossoms had a great attraction for the sensuous.

The Pomegranate enters in many ways into the folklore of the East. Its popularity is shown in the first place by its association with place names. Gath-rimmon was the name of one of the cities set apart for the use of the Levites. There was also a Rimmon in Zebulon, and another on the frontier of Judah, reminding us of our own Appledore, Appledurham or Appledram and the like. Possibly Rimmon, whom Naaman the Syrian, and his master the King worshipped, was a personification of the Pomegranate. The fruit and flower lent themselves to sacred uses, and appeared alike in the ornamental work of Solomon's Temple, and on the high priest's robes and his ephod. On account of the large number of seeds which each Pome produces the fruit has become an accepted symbol of fecundity and wealth. It was known as Juno's Apple, and Juno was the patroness of marriage and riches.

Not only was the culture of the plant perfectly understood, but a curious passage in the Song (VIII. 2) shows that its juice was made into a most acceptable beverage. "I would cause thee to drink of spiced wine of the juice of my Pomegranate." Sir John Chardin informs us that in his day the people in the East, particularly in Persia, still made considerable quantities of wine in this way. In and around Aleppo, the Turks have long been in the habit of mixing their dishes with wine acidulated with the juice of the sour Pomegranate. A volume, however, would be needed to record all that the Pomegranate suggests to the naturalist and the antiquary. We therefore turn to some of the other pleasant fruits which grew in the orchard or bayarah.

And we naturally give first place to the Orange. For though that word is not mentioned in the *Song of Songs*, there are evident allusions to the tree, fruit, and flowers in several places. If we accept the general verdict that the word rendered Apple (*Tappuach*) should be translated Orange, we shall find it easy to understand some of the allusions which otherwise seem meaningless. Let us take, for example, the words "Comfort me with Apples" (Canticles II. 5), which are given in the margin as "Strew me with Apples." The Hebrew verb (*raphad*) means to strew or spread. But how can one ask to be strewed with Apples? The old answer was to the effect that the odour of Citrons, Oranges, Lemons, and Apples was refreshing and exhilarating. But a study of Jewish customs makes the meaning clear. Let me quote a modern writer. "It is the Bride in the *Song of Songs* who is represented as using these words when faint with emotion. Now the idea of spreading over the bride under such circumstances branch, blossom, or fruit of the Apple tree possesses no significance whatever. But if we supply the true name of the tree, do we not at once see the appropriateness of the exclamation of the bride—Strew me with Orange? This is just what is done to a bride down to the present day; and here, surely, in the bridal song of the Bible, we have the often-enquired-for, natural, Eastern origin of the customary bridal wreath."

If we accept this interpretation we shall be able the better to understand another allusion. We may read (II. 3): "As the Orange tree among the dry scrub, so is my beloved among the sons." Here is a perfectly natural simile; the contrast between the fragrant, fruitful Orange, and the fruitless bushes of the rocky uplands is ideal for setting forth the charms of the beloved. Equally appropriate is the figure (VII. 8): "The smell of thy nostrils (or breath) is like that of the Orange." That the fruit and tree known to us as the Apple is not here intended is clear from the fact that it barely exists in Palestine, and is of the poorest quality. Even at Jaffa where the Orange abounds, the Apple can hardly be made to thrive. I cannot agree with

Tristram that the Apricot is the tree intended, since that tree is unable, like the Orange, to meet all the requirements of the case. It might be well to use the generic term Citrus, which includes the Lime and the Lemon, as well as the Citron and the Orange. "The Hebrews," says De Candolle, "must have known the Citron before the Romans did, because of their frequent relations with Persia, Media, and the adjecent countries. As the Greeks had seen the Citron in Media and in Persia in the time of Theophrastus, three centuries before Christ, it would be strange if the Hebrews had not become acquainted with it at the time of the Babylonish captivity. Besides, the historian Josephus says that in his time the Jews bore Persian Apples at their feasts." The name *malum persicum* or Persian Apple was one of the Greek terms applied to the Citron. It is well also to remember that such words as Apple and malum, like Oak and Rose, are generic, and have always been employed loosely and vaguely. For this reason we cannot argue anything from the Arabic name of the Apple, though it corresponds with the Hebrew word used in the *Song of Songs*.

If the Apricot cannot be admitted as the fruit named *Tappuach* that is no reason why it should not be included among the trees of the orchard. Though there is no Bible name for the Apricot, Tristram finds no difficulty in recognising it as a tree likely to be cultivated in the King's garden or orchard. There seems to be little doubt that the tree is a native of China, and that it travelled west in early times. It reached America many ages ago, and was looked upon by the old Greek botanists, such as Dioscorides as being a native of that country. De Candolle goes fully into the question of its origin and distribution, but he cannot inform us when it first became known to the Hebrews, nor do I know of any author who can tell us for a certainty.

The Mulberry might have found a place in the orchard. In the Apocrypha (1 Maccab. VI., 34) we read that "they showed the elephants the blood of grapes and mulberries that they might prepare them for the battle," the idea being that they would mistake it for blood, and so be excited for combat. Lastly, mention may be made of the Olive. This is a tree about which much has been written, and as it abounds in Palestine, no orchard would be complete without it. What other trees were included with the Pomegranate must be left to the reader's imagination; an orchard which had the foregoing only would not be badly stocked. *Hilderic Friend.*

TREES AND SHRUBS.

SOME GOOD SHRUBS OF EARLY AUTUMN.

Among the shrubs which are notable in autumn for the colouration of leaf and fruit, our native Spindle-tree (Euonymus europaeus) must always hold a foremost place. Even so, it is not often seen in gardens and is quite uncommon as a wild shrub in certain districts. There are several varieties, but I do not think any of them are so beautiful as the type when, at this season, its slender branches are hung with its handsome fruits whose coral-red segments on opening disclose the orange-coated seeds within. E. alatus has not yet fruited here, but the brilliance of its leaf tints is sufficient to enable it to hold its own with the best of autumn shrubs, while the curious, corky wings with which the branches are provided afford an unusual interest. The semi-prostrate E. obovatus is a useful plant for a cool soil, the large crimson and scarlet, warty fruits remaining on the arching branches long after the leaves have fallen. Yet another of this genus is E. latifolius; the fruits of this species are about an inch across when expanded and a deep glossy crimson, the seed-coats being bright orange.

The earliest of the Cotoneasters to ripen their fruits here is C. praecox. This appears to be closely allied to C. adpressa, but it has a bushier, more arching habit, the leaves are very much larger, the growth generally more robust, and the berries, which are rather shyly produced, are nearly as big as Sloes and assume a bright crimson-scarlet colour in August. Among the taller members of this genus, C. bullata must always take high rank. It has a bold and distinctive appearance, the crinkly leaves being large and handsome, and the fruits, which turn a brilliant blood-crimson in September, are borne in copious clusters and are individually nearly half-an-inch long. C. Zabelli and C. Dielsiana ripen their berries about the same time, i.e., towards mid-September, soon to be followed by C. Franchetii, the beautiful evergreen C. Henryana, and others. The more uncommon C. hupehensis, also among the earlier kinds, does not excel here as a fruiting species. Even in a season like the present, when most members of this genus are carrying an unusually heavy crop of fruits, this graceful shrub, one of the prettiest of the race when in flower, has a very poor yield. But, when all is written, I do not think there is any species or variety in the genus to equal C. horizontalis. A well-grown specimen of this shrub grown in the open on level ground, the spread of its planes measuring a dozen or more feet, is a most arresting object whether it is in its full summer green, loaded with its orange-scarlet fruit or fired with the splendour of its dying leaves.

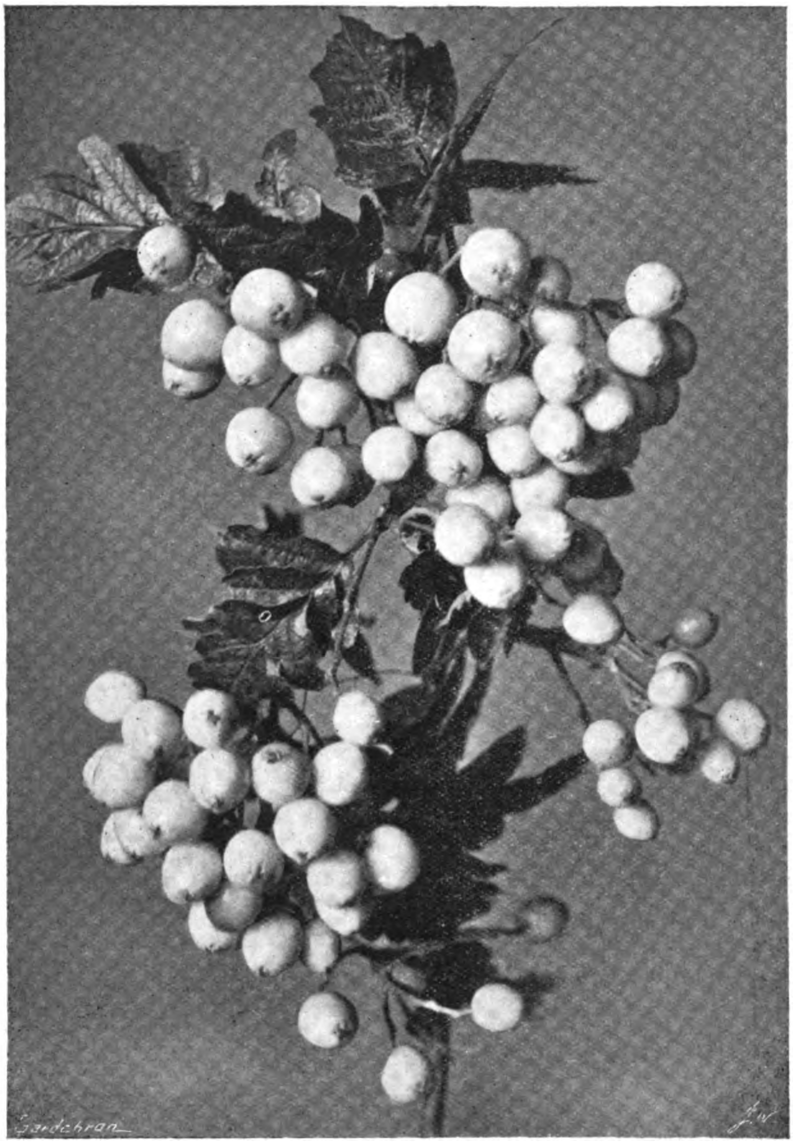


FIG. 86.—PYRUS PINNATIFIDA FRUITING BRANCH.
R.H.S. Award of Merit, September 23 (see p. 219).

Familiar as it is to most people, Leycesteria formosa never fails to make an appeal at this season, when its gracefully drooping boughs are laden with its wine-red bracts and plum-black fruits. Unfortunately, this fine subject is so often grown crowded up by others that its full charm is lost. It is a first-rate shrub for open woodland, and is seen to best advantage when placed rather above the eye level, a remark that also appplies to the hardier Fuchsias, such as F. Riccartoni, F. globosa, F. macrostemma, F. gracilis, and others of that set. The late blossoms of all these harmonise very happily with the warm tints of autumn.

Escallonia macrantha, one of the best of its race, is often finer at this season than any other, especially the young bushes which were cut back after the spring blooming.

The pink and white clusters of E. exoniensis are also very effective just now against the dark, glossy foliage and the bold and upright panicles of white, sweet-scented flowers of E. floribunda, the last of the genus to bloom, are very welcome towards the season's end.

Two of the Clethras, C. tomentosa and C. alnifolia, are bearing a full crop of their ivory-white racemes which have a delightful Hawthorn-like fragrance. These appear to be quite hardy, and the leaves often assume a really good yellow hue before they fall. Also a lover of moisture is Spiraea Menziesii, which, in its best forms, is an effective shrub for late flowering. But, like others of its class, it needs plenty of space, and is liable to give trouble by suckering too freely.

Spiraea Bumalda var. Anthony Waterer, will continue for some weeks to give masses of its striking blossoms, which are usually a better colour from now onwards, owing to the fact that the sun, which often renders the earlier flowers unsightly, has lost its bleaching effect. Then there is S. callosa alba, supposed by some to be allied to the last-mentioned, a dwarf, neat-habited little bush which bears a profusion of creamy-white flowers in flat corymbs from September onwards.

If not one of the choicest of its genus Genista tinctoria (especially the variety elatior) cannot be passed by at this season when there is scarcely another Broom in flower, and when its dull golden racemes strike so sympathetic a note of colour in the Heath garden or on autumnal woodland slopes. That curious, semi-prostrate form of this species known as var. mantica, which is the earliest of its set to flower, almost invariably blooms again at this time. Solanum crispum autumnale, which has been in flower more or less all the summer, will shortly be bearing a full complement of autumn trusses which are usually of a more pronounced colour than those of earlier days.

The showy Fremontia californica, notwithstanding the extraordinary prolificacy of its summer yield, will also soon be in bloom again, and a sunny October is often the best month of the season for the even more beautiful Dendromecon rigidum.

Although the Berberises which have become so popular of late years on account of their wonderful fruits and brilliant leaf tints are still for the most part wearing their full summer green—B. Wilsonae and one or two others only now coming into beauty—that fine old species, B. Thunbergii, has been bright with its flaming colours since August. Were it later in colouring it might easily be eclipsed by many a newer kind, but being so early it still holds its place among the most beautiful of our Barberries. *N. Wales.*

POTENTILLA VILMORINIANA.

This shrubby Cinquefoil may claim a foremost place among the fruticosa group, not only because of its good and vigorous habit and large and abundant flowers, but because of its beautiful silvery foliage. The latter is not only singularly charming in itself, but it seems to be a peculiarly harmonious setting for the creamy-white blooms. These blossoms, which are nearly one-and-a-half inches across, are produced in abundance practically all summer, reaching their greatest beauty in September and continuing until the first frost. With us P. Vilmoriniana makes a bush of some four feet in height, it is quite hardy, does admirably in a somewhat poor, shaley soil, and never gets any attention beyond an occasional cutting-out of exhausted branches.

Potentilla fruticosa, of which P. Vilmoriniana is one of many varieties, is a widely distributed species and found wild in some parts of the North of England and the West of Ireland. Mr. Bean in his *Trees and Shrubs Hardy in the British Isles* lists eight varieties, including P. Vilmoriniana. *A. T. J.*

RHODODENDRONS.

(*Continued from p.* 199).

With regard to autumn frosts, much may be done by adequate overhead shelter and good company. Planted in a wood there is no serious danger. The big-leaved trees require it in any case, and so also do the soft-leaved species, the 'Irroratums' and 'Barbatums' and 'Soulieis' and others.

In western China activity ceases gradually after September, coming to a standstill in October or November.. In England, on the other hand, abrupt night frosts may, and often do, succeed warm summer days in September, or even in August; and October is a dangerous month. To what extent injury by splitting takes place in nature I do not know, but probably it counts its victims by the thousand where the species are growing in the open. Summer drought may be defeated by two means—all round shelter and heavy mulching of the roots. In Rhododendron-land the bulk of the rain falls in the summer, sensibly enough; that is when the plants are active and thirsty. In our own land rain falls at almost any time except in the summer. Of course it often falls then also; but a month or two without rain is so common in many parts of the country that it may be regarded as habitual. Under the circumstances it is very sporting of Rhododendrons to put up with these conditions.

In Tibet spring droughts try them hard. There can be no question that there is great mortality from this cause alone. In the drought of 1921 in Yunnan I saw literally square miles of Rhododendron forest without a flower. In 1919, on the N.E. Frontier of Burma, I saw dozens of specimens of R. sidereum which had not flowered that year, probably on account of drought. In 1922 I marched through whole forests of R. sino-grande, which had not borne a single flower in the course of the year. Why? Again I suspect drought. In order to thrive, Rhododendrons require adequate moisture at all seasons and especially during the period of most active growth.

During drought conditions, the plants look limp and jaded, but unless the drought is unduly prolonged, they eventually recover; at any rate they appear to do so. Nevertheless if they fail, partially or completely in the following spring, such failure will be ascribed to immediate hostile conditions without regard for what happened in the previous summer. Yet, it may be, the previous year's drought was responsible. Cold affects woody plants like drought. If the soil is too cold the roots cannot absorb water and the plant may die of thirst. Prolonged frosts, late in the spring, are therefore dangerous; that is where all-round shelter and mulching are so valuable. Spring frosts are just as certain as anything can be in our exciting British climate. Except in the case of plants which bloom late—say from June onwards—there is considerable risk of their being cut. That cannot be helped. There is no advantage in having Rhododendrons which bloom with the Roses; it is early in the year that we want them. Risk the penalty therefore for

> "One crowded hour of glorious life"

and if R. Thomsoni sheds its blood

> "Lament we may, but not revenge
> the dead."

Shelter, again, will do much to save the innocent blossom. But after all, the loss of blossom, which turns brown and drops off when subjected to heavy frost, is not of vital consequence. The appearance of the plant is ruined for the year, that is all. What is serious is the cutting of the young foliage. For this reason, the species which break late, such as R. auriculatum, R. fulgens, R. neriiflorum and many others are particularly valuable. So late do the young leaves appear in these species that there is no chance of their being cut; indeed in north Britain the buds may be delayed till the young foliage is in danger from the first autumn frosts!

If there is one danger more than another which the Chinese Rhododendrons have to face in their own country, it is this threat of frost cutting. Over confidence does it. Blythe days jog open the buds. Out come the tender leaves, like silver plumes. The weather changes suddenly, the snow sweeps down like a wolf on the fold and all is lost. I have seen in China R. yunnanense simply cut to rags by just such a snowstorm; other species too. Countless thousands perish after such a trick; but there are countless thousands more to fill the breach. It is otherwise in England. I am doubtful if there is any sovereign remedy for this. The forest species do not seem to suffer to the same degree as those in the open, so here again the slogan is "shelter." But it is useless to worry about early frosts in this frosty land. The best remedy is to grow those species which have lived amongst similar alarms all their lives; or stick to hybrids. If money is no object the grower can afford to be foolhardy and pioneering. The flower buds as a rule open before the leaf buds, and if they bloom very early—as, thank goodness, many do—they may be cut without much damage to the plant. But as this may equally well happen if they open late, we need not panic. In England we are liable to frost in February, March, April, May and June. It is late frosts cutting both bloom and leaves which do the damage; and for that reason Rhododendrons which break into growth late are the safest.

There is perhaps no race of woody plants which in nature is so proof against fungus and insect pests as Rhododendron. I have myself come across only one case of fungus attacking a Rhododendron (R. Traillianum). The leaf was diseased and apparently the twigs were affected; but the plants appeared none the worse. Anyhow R. Traillianum is one of the most widely spread and successful species in N.W. Yunnan; it grows socially on every high range from the Mekong to the Yalung. Mr. Malcolm Wilson has recently described two species of fungi on the leaves of R. calvescens.[*] Mr. Watson mentions several species of leaf fungi known to attack species of Rhododendron, besides a leaf canker.

But in nature the traveller can only marvel at their immunity from disease, their health and vigour and vitality, and their astonishing number and variety. Not only so. In the depths of the rain forest, where it is hopeless to try and recognise trees by direct processes of observation, so bearded are they and smothered with epiphytes, Rhododendrons can generally be recognised by the almost complete absence of Moss on the clean, coppery-red trunks and the absence of epiphytes from the limbs. In the welter of big trees, when nothing could be distinguished in the canopy overhead, I have often been able to recognise the smooth, glistening, chestnut-coloured trunk of a "Stamineum" Rhododendron. It is only when at comparatively high altitudes the gnarled trunks grow out from the steep flank almost horizontally that a covering of Moss clothes the underside. Hooker, however, speaks of the branches of R. arboreum as loaded with Moss and Lichen in Sikkim; and Wollaston, writing of New Guinea Rhododendrons, writes of them as heavily overgrown with Moss. These, however, are two of the wettest regions in the world.

Whether Rhododendrons will remain so completely scatheless under cultivation is another matter. At the present time millions are being bred in this country. Great Britain and Ireland form a ghetto of alien vegetables. What effect will all this higher education, crossing, selection and coddling have on them?

---

[*] *Notes* from the Royal Botanic Gardens, Edinburgh.

Will the contortions of our climate, or still worse, our clumsy devices, permanently weaken them? Will they sicken of too much wet-nursing or, contrariwise, of too little sympathy? Or will they settle down and become good subjects of our liege?

Recall a few facts. Our Yunnan species come from between 25° and 30° N. latitude, and they are being grown between 51° and 56° N. latitude. In Yunnan nearly all the rain falls in the five summer months; in England, at any time except during the summer. The hardiest species in Yunnan come from an altitude where the weight of atmosphere they support is only two-thirds of what they support in this country. On the whole then they are very accommodating plants with elastic constitutions. We cannot grumble. A few species afford food for grubs which emerge from eggs laid inside the ovary and eat the seeds as they ripen. R. sino-grande suffers from this scourge; so too does R. aperantum. Yet both are common enough, the former making forests almost by itself.

Rhododendrons are easily raised from seeds, and ripe seeds retain life for a considerable time. The seeds are very small and should be sown thinly over the surface of the soil, in the pans. A compost of sand and humus, or sand and peat, well shredded, is best for the purpose—about three parts sand to one of humus.

Quite recently Mr. G. Taylor devised a method of raising seedling Rhododendrons in Moss.* the advantages claimed for this method are that uniform conditions of watering are secured and that the seedlings are more easily removed without damage from this soft bed (which can be pulled to pieces strand by strand) than from the ordinary seed pan. There is much to be said for raising one's own Rhododendrons from seeds—which, of course, must be done under glass. After pricking out the seedlings into pots, or better still, into frames, they may be planted out in the open in the second or third year. It is important to acclimatise them gradually, without, of course, exposing them to conditions quite contrary to those under which they flourish in nature. There is no occasion to be harsh; they may resent it. But it is obvious that if a plant comes through five winters without blenching, in its sixth year it will stand more than it could in its second. It is the early years of a Rhododendron's life, while it is adjusting itself to local conditions, which are precarious. Hence the importance of bringing them up to it from the beginning. Rhododendrons are like children and puppies; you never quite know what they will do next. But raising them from seeds is a long job. Some of the smaller species, it is true, flower in a few years—quite a number in their third or fourth year, if the conditions are favourable. But the bigger species—and these are, after all, the most important—require much longer. Some species take eight, ten, fifteen, even twenty years to flower; or if the conditions are not to their liking, may not flower at all, but just hang on. Moreover, it must be remembered that the species which come so quickly to the flowering stage as to bloom at the tender age of two or three, are not much to look at for several years. They bear a truss or two, but they are not yet smothered in blossom, which is what we want to see.

Take it all round then, raising Rhododendrons from seeds is not the ordinary man's job at all. That must be left to the land owner and nurseryman. The ordinary man must buy his plants ready made; preferably when about to flower. That is to say, he must buy them in the winter or early spring; the plants lift easily any time between October and April, provided they are not lifted during severe frost. *F. Kingdon Ward.*

(*To be continued*).

---

* *Gardeners' Chronicle*, April 8, 1922.

NOTICES OF BOOKS.

Maize.

Ages before Europeans discovered America, Maize had been grown by the aboriginal inhabitants of that continent and had served as their principal food. Although it is undoubtedly of American origin, the Maize no longer exists in a wild state, and the plant as we know it to-day is no doubt the product of cultivation over long periods of time by the ancient civilisations that existed in Peru, Mexico, and Central America.

There is no lack of literature on the subject of Maize and a full bibliography would need a large volume. But however convenient this may be for the specialist, the geneal reader would find such a wealth of material embarrassing, and would prefer a concise summary of the present state of our knowledge of this interesting cereal. This has been provided in a volume of the University of Chicago Science Series, entitled *The Story of the Maize Plant*,* by Paul Weatherwax. Although the book is intended for the educated layman, the author has made use of technical terms which are probably not generally understood, but to those familiar with such terms the book provides an interesting account of Maize from many points of view. In aboriginal America the chief centre of Maize cultivation was Mexico, and it is probable that this country was the original home of the plant, whence it became distributed, by cultivation, to North America, so far as the great lakes, and in South America to Chile and Argentina. It was discovered in cultivation in the West Indies by Columbus and his companions, and was later introduced by the Spaniards into Europe whence it was transferred to North Africa and the East, probably by the Portuguese. To-day Maize is grown extensively in Mexico, Argentina, Hungary, Roumania, Italy, Russia, Egypt, India, and South Africa; and to a less extent in Canada, Peru, Chile, Central America, Spain, Portugal, France, Germany, China, Japan, and the Philippine Islands. It is, however, largely an American crop, the United States producing each year more than all the other countries together.

After the interesting account of the early history and present distribution of Maize, Mr. Weatherwax gives details of the minute structure of all parts of the Maize plant and discusses its ecological relations, under which heading is included its fungus diseases and insect pests as well as its requirements as regards climatic conditions. This is followed by details of the processes of cultivation and harvesting as practised in what is known as the "Corn Belt" of the United States—"corn" being the name commonly used in America for Maize.

The Maize plant is monoecious, the male flowers being borne in a panicle, termed the "tassel," at the top of the main shoot; while the female flowers are produced on short branches in the axils of the leaves, the numerous pistils which protrude from the husks being known as the "silks." This arrangement of the flowers makes cross pollination easy and of frequent occurrence and renders it necessary to isolate strains that are required to be pure. Cross-pollination in Maize produces an immediate result in the endosperm of the grain, an occurrence known as xenia, and this is due to the fact that the endosperm, as well as the embryo, is of sexual origin and is the result of unclean fusion. In the "double fecundation" which takes place in Maize, the pollen tube makes a contribution to the endosperm as well as to the embryo, and a hybrid embryo is therefore accompanied by a hybrid endosperm. This explains the remarkable phenomena illustrated in the coloured plate which forms the frontispiece of the book where two ears of Maize are shown, each bearing blue, yellow, red, white and spotted grains.

The occurrence of xenia renders the Maize plant of great value to the Mendelian investigator, as results are obtained in the first generation that would only be evident in the third generation with ordinary plants, and for this reason the plant has played an important role in the elucidation of heredity problems.

The grain not only varies in colour, shape, and size, but also in physical properties; the various kinds being known as flint, dent, pop, soft or sweet. The most popular in the "Corn Belt" are the "dent" varieties; an ideal ear of this type being from eight to ten inches long, almost cylindrical, with from eighteen to twenty-four rows of grains which are straight and uniform along the whole length of the cob. The principal use of Maize is as a food-stuff for live stock, but various preparations are made for human consumption, such as cornflour, flaked Maize, hominy, etc., and the author anticipates that this list will be considerably extended in the future. The familiar "popped corn" is prepared by heating the flinty grain of the "pop" varieties, whilst the fresh ears of "sweet corn" are used as a vegetable. From the embryos which are separated during the milling of Maize an edible oil is obtained which has a number of uses; whilst commercial starch, glucose and syrups are also manufactured Maize products. The importance of Maize as a food-crop is therefore evident, and this book, which deals with so many aspects of the Maize plant, should make an appeal to a large number of readers. *H. Spooner.*

Trees and How They Grow.

There is no preface or introduction to this book* by Mr. G. Clarke Nuttall, B.Sc., neither is there anything to indicate the class of reader the author had in mind when preparing the text. From the general style of the work and the manner in which the information is given we imagine that it has been written for children interested in nature study, and that the description of each tree or shrub constitutes a lesson upon that particular species.

Descriptions are given of some twenty-four of the commoner trees and shrubs met with in the country, not all of them being British. As instances there are Ash, Hazel, Elms, Larch, Yew, Alder, Oak, Hornbeam, Plane, Elder, Guelder Rose, etc. The botany of each example is given in easy terms, the time of flowering, and uses; and some of the legends attached to various species are introduced. Moreover, very good illustrations are given in most instances. If the object of the work is to interest young people in the trees commonly met with, the author is likely to succeed in his object, for the information is given in such a way that it is interesting and easily understood. If, however, the author had in view persons already possessing some elementary botanical knowledge, or those who study trees for profit, the work is less likely to meet with success, for the subject matter could have been given in much less space without reducing its value. The book runs to 184 pages of letterpress and contains numerous illustrations, many of the trees being depicted in summer and in winter growth. *W. D.*

---

* *The Story of the Maize Plant*, by Paul Weatherwax, Associate Professor of Botany, Indiana University. pp. 247 (Chicago: The University of Chicago Press, Illinois, U.S.A.). Price, $1.85, post free.

* *Trees and How They Grow.* By G. Clarke Nuttall, B.Sc., with Colour Photographs direct from Nature by H. Essenhigh Corke, F.R.P.S. Published by Messrs. Cassell and Co., Ltd., La Belle Sauvage, London, E.C. 4. Price 7s. 6d.

FORESTRY AT THE BRITISH EMPIRE EXHIBITION.

Early in 1923 the Officials of the British Empire Exhibition expressed a hope that Home Forestry and the Home Grown Timber Trade would be represented at the Exhibition, therefore a committee was formed of members representing the various societies and institutions interested in the subject, under the chairmanship of Lord Lovat, Chairman of H.M. Forestry Commission, with the object of organising such an exhibit. At the first meeting a suggestion was made that the Director of the Royal Botanic Gardens, Kew, be asked to allow Mr. W. Dallimore of that establishment to act as honorary organising secretary, and he, with the sanction of the Ministry of Agriculture and Fisheries, very kindly complied. At the first meeting the members of the Home Timber Trade indicated that the quantity of timber available for cutting in the British Isles would prevent them bringing together any extensive exhibit with the view of an immediate expansion of trade, but they felt that it was necessary that they should join with those responsible for the production of trees, in placing before the British public an educational exhibit that would direct the attention of indifferent persons as well as those definitely interested in trees and timber, to the great possibilities of home grown timber, the value of a sound forest policy to the community, and the absolute necessity for an ample reserve of timber being formed in case of another emergency arising, such as that recently passed through during the great war.

As the exhibit could not be self-supporting it was decided to approach various societies and individuals for financial assistance, and to divide the committee into two sub-committees, one for England and Wales, the other for Scotland, the two sub-committees working independently until the exhibits were assembled at Wembley, wher all should come under one management. At the same time it was decided that England should erect a house of home-grown timber, and that Scotland should build a village hall; England largely confining herself to hard woods and Scotland to soft woods; exhibits representing forestry proper being left to Scotland and the Forestry Commission.

As the English exhibit would largely be a matter for the timber trade, the members of the Federated Home Grown Timber Merchants' Association undertook to build a house showing the constructive properties of British Oak, the committee undertaking to pay the rent of the ground and cost of maintenance during the period of the exhibition. They elected to reproduce a half-timbered house of fifteenth century design, with certain improvements that were added during the following two centuries. Mr. Harold G. Turner, A.M.I.C.E., of Haywards Heath, Sussex, acted as honorary architect, and the building work was undertaken by Mr. E H. Munnion, of Ardingly, Sussex, and these gentlemen were unceasing in their efforts to make the exhibit the success that it has become. Some 5,000 cubic feet of Oak timber was needed, some of it of very large dimensions, and this was provided by the members of the Federation, prominent amongst them being their President, Mr. E. C. Horton, who also acted as chairman of the English sub-committee. The timber was collected at Ardingly, where it was worked by country workmen skilled in the use of the adze, and was then sent by road to Wembley. Builders' merchants and others came to the aid of the timber merchants by presenting bricks, tiles, drain pipes, windows, panelling, etc., whilst a firm of manufacturers of electric light appliances wired and fitted the house with the necessary electric light fittings as an exhibit. It was originally intended to exhibit a variety of manufactured articles in the house in addition to furniture, but in the end it was decided to give up the house to an exhibit of period furniture, the same being made by Messrs. W. Howard and Son, of Berners Street, W., the furniture chiefly being of Oak and Walnut.

This decision to give up the house entirely to furniture made it necessary for the Committee to erect a building for the display of other articles. Eventually Mr. Turner very kindly undertook to supply drawings of a building that might ultimately be sold for a sports pavilion or village hall, and an arrangement was made with the Building Committee of the Federated Home Grown Timber Merchant' Associations to erect the building. The terms of the agreement included the clause that the building should be of Home Grown Timber, so that it might be an exhibit in itself. The framework is of Scots Pine, the weatherboarding and floor of Elm, the doors and cills of Oak, the roof shingles of Oak, a porch at one end is of Elm, and a porch pergola at the other end is of Oak. The electric light fittings were again supplied by the firm responsible for the fittings in the house. The inside of the building measures 55½ feet by 20 feet, and the walls are let in panels three feet wide to timber merchants, manufacturers of woodware, and others. Amongst the most interesting exhibits may be mentioned Messrs. R. Groom and Sons, Wellington, Salop, who have sent a very comprehensive selection of kitchen and dairy requisites; Messrs. John Nicholls and Sons, All Saints' Road, Wolverhampton, have a wide selection of turned articles, including candle-sticks, plumbers' tools, etc.; Messrs. Oates, of Worksop, have sent a wide selection of tool handles made of Ash, whilst similar exhibits have been made by Messrs. G. P. Lloyd, Excelsior Works, Cardiff, and Messrs. Lloyd and Penhale, Ltd., Grandison Works, Swansea. Messrs. Samuel Putney and Co., Harrow Road, Paddington Green, have an interesting exhibit of timber, particularly good being their brown Oak panelling and Walnut boards. Messrs. Scupham and Wood, Leeds, show a considerable variety of turned articles, including electric light standards, candle-sticks, balusters, door handles, etc. Messrs. Charrier and Marbut, Putney Market, have a selection of carved Oak mouldings; Messrs. William Wright and Sons, Chesham, and Mr. Joseph Reynolds, of the same town, a wide range of domestic articles, toys, etc., made from Beech, Ash, Sycamore and other timbers. Messrs. John Ward and Sons, of Boxmore, have good examples of joinery, etc.; Messrs. Box and Turner, of Ardingly, exhibit gates, fencing, ladder spokes, railway keys and other articles; Messrs. E. C. Horton and Sons, Westerham Station, Kent, show similar objects; Messrs. Russell Bros., Portarlington, have sent a case of articles representing the turnery business in Ireland; Messrs. Newsum, Sons and Co., of Gainsborough, and Messrs. Smith of Bootle show bent Ash ware; Messrs. East and Sons of Berkhamsted have a wide selection of hoops, tool handles, &c., whilst a very interesting exhibit is that of Kepston, Ltd., Berkhamsted, who send pulleys. The English Forestry Association exhibit tools, plans, &c., Messrs. Dring and Fage, measuring instruments; Messrs. Little and Ballantyne, Carlisle, photographs of their famous tree nurseries; and *The Gardeners' Chronicle, Ltd.*, a wide selection of books suitable for foresters and timber workers.

Amongst the private exhibitors a handsome cabinet, two chairs, a table and a print of the Greendale Oak from which the furniture was made, have been sent by His Grace the Duke of Portland; the Earl of Leicester has sent a large model of a workman's cottage made by workmen on his estate, the framework being Oak, the other woodwork of Pine, with costings for the full-sized house. Mr. Chas. Wright, of Wilton, has sent a handsome carved panel of Cedar; The Royal Tunbridge Well Ware Co., articles of their famous work; Mr. C. W. Booker, Lindfield, birds made from cones; Mr. Wyckham Blackwell, a box of Plane wood; Mr. Thos. Holman, Ardingly, carved articles; Mr. John Stenning, old Oak carvings. The members of the High Wycombe Furniture Manufacturers' Association have sent eleven handsome chairs; and other exhibits include Messrs. Rudders and Payne, Birmingham, a case of turnery; Messrs. John Sadd and Sons, Maldon, panels of various timbers; Mr. Charles Claridge, Exeter, panel of Oak inlaid with Sycamore; Messrs. Bowerman and Sons, Bridgewater, timber and a model of a bungalow.

Out-of-doors are rustic seats, a summer-house, table, wheelbarrow, &c., from Mr. C. White, Bromley Common; gates from Messrs. May and Butcher, Maldon; Messrs. Box and Turner, Ardingly; Mr. Percy Barker, Shrewsbury; and the Earl of Minto; fencing and gates from Messrs. Bragging of Banbury; a large Oak log from the Baltic Timber Company; planks from Messrs. Bowerman and Sons, Bridgewater; Messrs. Horton and Sons, Westerham, the Earl of Minto, and Messrs. Box and Turner, Ardingly.

The Societies other than the Federated Home Grown Timber Merchants' Association, contributing towards the expense of the English section include H.M. Forestry Commission; The Surveyors' Institution; The English Forestry Association; The Land Agents' Society; The Central Landowners' Association; Royal English Arboricultural Society; Timber Trade Federation of the United Kingdom; South Wales Pitwood and Timber Merchants' Association. The management of the exhibit is in the hands of the Honorary Secretary.

An account of the Scottish Exhibit will follow.

IMPERIAL BOTANICAL CONFERENCE.

(*Concluded from p.* 213).

The first paper on the relation of forest pathology to silviculture was delivered by Dr. A. W. Borthwick. Disease is not an accidental or chance occurrence. The pathologist can assign the cause, and further he can indicate the pre-disposing conditions which are liable to result in mild, severe, and epidemic calamities. Apathy and neglect in the past, on the part of the cultivator, has led to many complications which render immediate prevention and cure a task of great difficulty. There should be a continuous and close co-operation between the silviculturalist and the pathologist. Trees differ from other crops in that, damage once done, during any period of their long rotation, remains permanent. Disease may, in some cases, be cured, but the resulting and inevitable loss in increment can never be made good. Silvicultural treatment may not only have an immediate influence upon the growth of trees, but these operations determine, to a large extent, the welfare of the trees in the distant future.

Points to be noted are: (1) Selection of types likely to form a vigorous and healthy growing stock. (2) Selection of site suitable to species or type (and *vice versa*), by a careful study of the growth factors of the locality and especially of those factors likely to cause disposition to disease. This must be supplemented by a thorough knowledge of the anatomical and physiological characteristics of the various available species and types of trees. (3) Selection and adaptation of silvicultural treatment to suit, not only different species, but also one and the same species according to the local site conditions. This involves (*a*) method of soil and surface preparation; (*b*) method and density of planting; (*c*) kind of crop pure or mixed (temporary or permanent) proportion of trees in mixture and their grouping and combination; (*d*) thinning commencement, frequency and degree.

Operations so fundamental and far-reaching in their effects upon the physiological activities of trees and even upon their anatomical structure, must be carried out with skill and caution, and the only way in which this can be done with reasonable safety is by a close co-operation between the practical cultivator and the pathologist. The pathologist should have facilities for extending his investigations to the field, in order that he may supplement his laboratory investigations and experiments by further research in the forest, as this is the surest and quickest way in which scientific work can be translated into practice.

The second speaker was Mr. W. E. Hiley who contended that the practice of silviculture has been developed in the past chiefly on an empirical basis, but, as our botanical knowledge increases, silviculture must be more and more dominated by scientific considerations and must become in large measure the practice of applied pathology. The term pathology is used in a wide sense to include the study of all agencies which reduce the rate of growth of a tree or prevent its full development, and the speaker confined himself to non-parasitic agencies.

Silviculture is, in the main, concerned with regeneration (natural and artificial) and subsequent cultivation (principally thinning). In a virgin Coniferous forest not more than one seed in a million can germinate, grow and reach maturity. The majority never germinate, and those that do suffer enormous infant mortality. The loss of seedlings is due partly to parasites and vermin, but very largely to physical causes such as high temperature of surface soil, frost, drought, and lack of light. Much attention has recently been paid to the first of these. Münch showed that in Bavaria the temperature of the superficial millimetre of soil exposed to the sun might rise to 62° C. This killed a portion of the hypocotyl of young seedlings which subsequently died. Experiments have shown that a temperature of 45° C. if applied locally to the hypocotyl region for ten minutes is sufficient to produce the same result. Toumey and Neethling have shown that at Yale this is a very important factor in determining the survival of seedlings and this fact may be sufficient to render impossible the attempted application of Swedish methods of regeneration in Eastern Canada. Wagner's method of regeneration known as "Blendersaumschlag" is determined mainly by the object of reducing the loss of seedlings from physical causes.

Until recently methods of thinning have not been scientifically studied and the fashion has varied periodically. Now many experiments are being carried out to determine for individual species the methods which give the highest increments and best quality timber. Such experiments are necessarily slow. It can be shown on physiological grounds that as a tree becomes taller it requires a larger crown in order to grow healthily. The possibility of discovering with certain species the best relation between crown space and height was discussed.

Dr. J. W. Munro treated principally of insect attacks, but from a general standpoint. First the inter-relation between insects and fungi in the causation of disease was considered; and as examples were quoted Tortrix viridana and the Oak mildew (Oidium); Pissades notatus and Fomes annosus; Tetropium Gabrieli and root-rot fungi in Larch plantations; and bark beetles and parasitic fungi. Next were treated the inter-relation between bad silvicultural conditions and insect injuries. The bark beetle Hylastes ater is frequently injurious in badly drained areas. The pine-shoot beetles Myelophilus piniperda selects trees lacking in vigour as a result of adverse local conditions. Scots Pine and Corsican Pine show marked difference in liability to Myelophilus attack under varying soil conditions.

A further section was the inter-relation between insect attacks and silvicultural conditions. The constitution of a forest, whether pure, consisting of one species or mixed, comprising two or more species, markedly affects liability to insect attack. This is usually ascribed to the facts that in pure woods the feeding ground is uninterrupted while in mixed woods it is discontinuous. This explanation is only a partial one. It takes no account of the fact that other factors than food supply affect an insect's prevalence. Of these other factors parasitic or predaceous insect enemies are of high importance. Many of the parasitic Hymenoptera, for example, have several hosts; these hosts, again, feed on a variety of plants, and the prevalence of an insect pest becomes associated with the plant complex. The plant complex or various plant associations occurring in a forest depend on the silvicultural conditions and the undue prevalence of a forest insect may be indirectly due to the silviculture system in practise. This may be illustrated by the Spruce Bud-worm problem in Canada.

The discusssion showed that there is the same general feeling towards considering the relation between tree and parasite as a complex one dependant on the interaction of many inter-related factors as is becoming usual in the case of crop plants.

FRUIT GARDEN.

CORDON DESSERT APPLES.

The increased interest in the cultivation of Apples and Pears under the cordon system of training has evidenced itself to a noticeable extent since the war, and in itself is most commendable. Many vacant spaces may be utilised by planting single or double trained cordons, which will prove a paying asset in a short space of time.

Most aspects are suitable for one or other varieties of hardy fruits and Pears, Plums, and even dessert Cherries may be planted on north-east and east walls.

Apples, especially dessert varieties, require a west, north-west, and south-east aspect, when by proper summer and winter pruning colour, contour, flavour and crop may be expected.

It has been my pleasure during the past month to view a fine crop of choice Apples growing on trees trained cordon fashion arranged about two feet apart, and carrying full crops of clean, well-formed fruits, which were a credit to the gardener and a pleasure to the employer.

I strongly advise a dressing of crushed charcoal and flowers of sulphur to be incorporated with the soil as planting proceeds The charcoal should be broken into pieces about the size of Walnuts, using about one pound of charcoal to three running yards. and two ounces of sulphur to the same distance. The specimens may be planted perpendicularly or obliquely and root-pruning should be performed at the time of planting. Shallow planting is to be advocated as it assists the trees to rapidly recover from the check.

The method of planting trees on the cordon system in the open, has proved a paying proposition, and during the past week it has been a great delight to me to view a quantity of Cox's Orange Pippin, intermixed, one in seven, with Worcester Pearmain. These trees are literally covered with fine specimen fruits. I well recall, too, excellent crops of Ribston Pippin, James Grieve, Worcester Pearmain and Cox's Orange Pippin, grown as cordons, planted on slightly raised ground.

The following varieties may be thoroughly recommended as suitable for the purpose:—Madresfield Court, a new choice variety, which has finely flavoured fruits and is very productive. The flesh is yellow, tender, crisp, juicy, and of excellent flavour. It is very beautiful in colour and of perfect shape. The season is from October to December.

Queen Mary is another handsome dessert variety, embracing all the qualities of a first-rate Apple. The colour of the fruit is yellow, streaked and shaded with crimson scarlet. This variety is very prolific and most precocious in forming spurs. It is in use from October to November and undoubtedly has a great future, for when better known it will be in great demand. Easter Orange is a late-keeping sort of great merit, the flesh being firm, yellow, and of good flavour. The fruits are of medium size, round, conical, deep golden yellow with flushes and stripes of dark, dull red; the season is from March to June.

St. Everard, an early Apple possessing Cox's Orange Pippin flavour, ought to be grown in every garden. The colour is yellow; striped with crimson, and the fruit has a pretty and inviting appearance. The flesh is yellow, crisp, and juicy, and of first-class flavour. Its season is September and it should be eaten so soon as gathered.

Another fine variety is Hitchin Pippin, which, I contend, is an improved King of the Pippins, and deserves to be better known. The colour is apricot with a flush on the side next the sun; the fruit is of medium size and of good flavour, the flesh being crisp and, all in all, it is a first-rate variety worthy of extended cultivation. Langley Pippin is also a useful August Apple, medium in size, conical and brightly striped with red; it is useful on account of its early maturity. King of the Pippins is too well known to need description, but it is one of the best for cropping on the cordon system.

William Crump, a medium-sized conical fruit, heavily flushed with red and slight russet, has a fine aromatic and rich flavour. This Apple does extremely well on single, double, or triple cordon, as well as in espalier form. The season is from December to January.

The Houblon may be regarded as an highly-coloured Cox's Orange Pippin. The fruit is dark crimson with golden russet patches. It is slightly larger than Cox's Orange Pippin, favouring that variety nearer than any other I know. October is the best month to eat it in but it will generally keep throughout November. The good qualities of Ribston Pippin are well known and it does excellently on the cordon system, while Orleans Reinette is worthy of a place in every garden; the flavour is delicious and when planted in company with Worcester Pearmain bounteous crops ensue. The fruits resemble a medium-size Blenheim Orange, being somewhat flat, rich red, and golden russet in colour. For flavour it ranks next to Cox's Orange Pippin; the season is from December to February. James Grieve, another well-known October Apple, commands attention as one of the best croppers on the cordon system. Ellison's Orange is also a useful Apple, similar in shape and colour to Cox's Orange Pippin, with a pronounced aromatic flavour. It is in use during October.

Cox's Orange Pippin must be ranked as the best variety in the world, and cannot be left out of the list of sorts so commendable for cordon cultivation. Worcester Pearmain ought to be planted, here and there, amongst the trees, to provide pollen. Allington Pippin is another free cropper, and adaptable for all purposes of training. It is free in blossom, clean in growth, and a tremendous cropper. From October to December is its season of use.

Superb is a more recent introduction and worthy of extended trials. In colour it is similar to Cox's Orange Pippin, and as it keeps so much later than that variety, it should prove very valuable. *Pomona.*

VEGETABLE GARDEN.

THE ONION.

Allium Cepa, Linn.

The Onion with its long and somewhat chequered history, its variations in form, colour, qualities and uses, and the multiplicity of the names that have been applied to it since it came into being, constitutes a most interesting study. As regards the country of origin there is not in existence sufficient reliable data to enable it to be fixed definitely, but as it has a place in the oldest botanical literature in existence to-day, and as this has come to us from the south-east, it appears reasonable to affirm that central or south Asia was its home; the date of its discovery and application to its present uses is unknown. In this connection the following extract from *The Vegetable Garden*, Vilmorin, 1905, is of interest: "Within the last few years, M. Regel, Junr., discovered south of Kouldja, in Turkestan, a plant which had every appearance of being the wild form of Allium Cepa, and we believe the same form has also been found in the Himalayas."

Its pungent odour doubtless attracted the early discoverers and soon led to its use for flavouring food, more especially meats, and in course of time for medicine.

Its nutritive properties are almost negligible, but it certainly helps to make other and more nutritious foods palatable and more easily digested, and at the same time stimulates the internal economy of the human frame, and thus pleasantly aids in keeping it in a healthy condition. In form it is a bulbous root, mainly spherical, of biennial, and occasionally of perennial, habit, easily cultivated in good garden soil, propagated by seeds and sets and available for use all the year round.

The name Onion (in old English, Unyun, *vide* Dodoens, 1550) is derived from the Latin word *unus*, one, and is applied to this particular species to signify that it consists of just one single bulb, while other members of the same family, such as Garlic and Shallots, are composed of numerous separate cloves. Earlier names were, Grecian, *Crommion*; Latin, *Cepa*; and Italian, *Cipolla*, by which name it is known in Italy to-day

It was, and is, cultivated and esteemed in all the countries of Europe, from Russia to the Atlantic, and in northern Africa, including Madeira, Algeria, and Tripoli, and particularly in Egypt before the Exodus, a country which is one of the chief sources of supply to Britain at the present day. Palladius wrote of Cepullae (*i.e.*, little Onions) in the dawn of the Christian era, and Dodoens wrote of *Cleyne Ayenyuens* (small Onions) in the days of Good Queen Bess. Linnaeus and Miller, who were contemporary, were not of one mind in regard to the action of the former in placing the Cepa under Allium in his new *System of Botany*, and in the 7th edition of his *Dictionary*, published shortly after the Linnaean system had been promulgated, Miller retained the Onion under Cepa, the name used by Pliny and the ancient apothecaries, "so that Gardiners should not be confused by the change that Linnaeus had made." It was sufficient for Miller that "Ray, and Tournefort, admitted that the fistular leaves and swelling stalks distinguish the plant of the genus Cepa from that of the Porrum and the Allium," he therefore quotes from the *Pinax* of Caspar Bauhinus, 1671, the following varieties of the common Onion which were grown in his day:—"The Strasburgh.—This is the Cepa oblong. C.B.P. 71; The Spanish.—This is the Cepa vulgaris, floribus and tunicis purpurascentibus. C.B.P. 71; The White Egyptian.—This is the Cepa floribus and tunicis candidis. C.B.P. 71. All these vary from seeds, so that there are several intermediate differences which are not worth enumerating."

The following paragraph from Miller is of special importance just now, as it shows that variability, especially in some varieties, is an inherited tendency which growers have never yet been able to entirely eradicate, in spite of the most intelligent and persistent efforts:—

"The best Onion for keeping is the Strasburgh kind, which is an oval-shaped bulb, but this seldom grows so large as the Spanish, which is flatter; the white sort is esteemed the sweetest; but these varieties are not lasting, for if you save seeds of white Onions only you will have a mixture of red ones amongst them; nor will the Strasburgh keep long to its kind, but will by degrees grow flatter as do the large Portugal Onions when planted in our climate, which in a year or two will be so far degenerated as not to be known they were from that race."

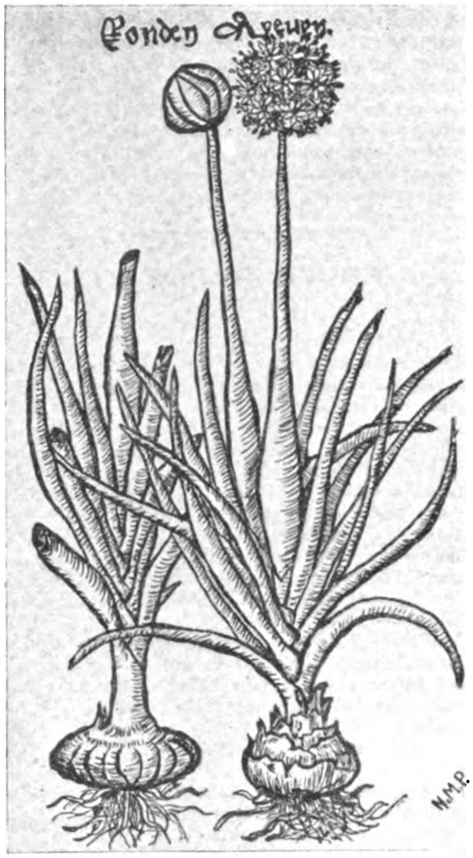

Ronden Ayeuyn.
H.M.P.

FIG. 87.—RONDEN AYENYN (ROUND ONION): From Dodoens "Historie," about 1550.

The foregoing paragraph naturally raises the questions of form and colour, but on these points very little needs to be said. As regards form, Dodoens, 1550, figures two different varieties; the round (see fig. 87), a flattish round bulb; and the long, which is a drawn-out oval. A figure of the first-named is here given for the purpose of comparison with present-day varieties. Respecting colour the following extract from the English translation of Dodoen's *History of Plants*, made by Henry Lyte, in 1578, is of interest: "There be divers sorts of Onions, some white, some red, some long, some round, some great, some small, but all of one savour and propertie, saving that one is a little stronger than the other; yet they differ not in leaves, flowers and seeds."

It will be noted that the yellow and brown coloured varieties, which are the most important class at the present day, either escaped the notice of Dodoens or were not considered worthy to be mentioned. One hundred years later the Brown Strasburgh had become the leading variety of the day, and every onion-growing country claimed it as its own; hence we have practically the same variety under at least half-a-dozen different names. Including the yellow and brown there are Onions of practically every shade except blue, and, strangely enough, John Mason, in 1793, offered Blue Onion Peas! Where are they now?

A complete list of all the varieties of Onion at present in commerce it is evident would be far too lengthy to be inserted in the pages of *The Gardeners' Chronicle*, neither is it necessary, for in addition to the recognised synonyms, there are so many varieties that resemble each other in several points that they could hardly be classed as distinct. Europe, America, and Australia have each had a hand in the work of development, and as the Onion makes itself at home in almost any climate and is very susceptible to cultural influences, it is little wonder that considerable variation exists in different strains of the same variety. This may be the reason why American-grown Onion-seed has given such disappointing results in recent years in England.

As a rule, the largest and mildest Onions are produced in the warmest climates; Giant Spanish and the Giant Rocca forms of the Italian Onion are cases in point. There are, however, exceptions to this rule, notably the red and white Teneriffe varieties, which are small, very early and very flat. These are very popular in America, under the name of Bermuda Onions, probably because they have been grown for many years in immense quantities (from Teneriffe-grown seed) in that highly-favoured island for the early American market. They may be successfully grown in England as a spring-sown variety, but they are not to be recommended as the colours are very variable and not of a very pleasing appearance. The quality is excellent.

Other small varieties include the extra early Silver-White Queen and its numerous progeny, which, if sown rather thickly in March, mature in July, producing bulbs of nearly one inch in diameter. The most shapely of these make excellent picklers, and the smaller bulbs, in the hands of a capable French chef, with the addition of Petits Pois *ad. lib.*, a sprinkling of tiny Carrots, and sundry other unconsidered trifles, make a dish fit for a king.

The Como or Yellow Queen Onion may also be highly commended; it is the prettiest of all the Onions and one of the best quality. It may not be generally known that the bulbs of Queen Onion, if left in the ground in a favourable position, after a rest, start to grow again and develop nice, shapely bulbs, from three to four inches in diameter; they are largely grown in this manner in the southern hemisphere. In our climate the best way to obtain such results is to sow the seeds in September in a sheltered position, and so soon as the operation can be done safely in the new year, transplant them thinly in fairly rich soil; by June, in an average season, bulbs from three to four inches in diameter will be the result. Other varieties may be treated in the same way with better results in the matter of size and appearance, but the mild, pleasant flavour of the Queen variety will be lacking.

As a large percentage of the Onions grown in Britain are from spring-sown seed, the following list of suitable varieties, including those to which awards were made at the R.H.S. Wisley trials in 1923, may be of service. As a general rule the round, flat varieties are the earliest, and the globe are the longest-keeping.

Of flat varieties there are Anglo-Spanish (Award of Merit), a fine strain of Reading type; White Spanish (Highly Commended), sulphur-yellow, very early; White Spanish (Commended) straw-yellow, one of the most popular Onions in cultivation; White Portugal (Highly Commended): silver-white, a good pickling variety: Red Flag (Highly Commended), deep blood-red; Cantello's prize, the earliest sulphur-yellow variety; Banbury, Main Crop (Highly Commended), Nuneham Park and Improved Reading are all thoroughly reliable and improved forms of the White Spanish type. Brown-skinned, flat varieties, to be recommended for their long-keeping qualities, are Strasburg, a favourite variety of Miller's, and its many synonyms, Ironhead and Pale-red Niort.

Intermediate varieties, which may be regarded as a thicker form of the White Spanish type, include Rousham Park Hero (Award of Merit) and the best of its class; Giant Zittau (Commended), rich yellow and long-keeping; Australian Brown (Highly Commended), invaluable in hot summers, coppery-brown; Danver's Flat Yellow, the leading American variety; Red Wethersfield, large and long-keeping, the best all-round red variety.

Globe varieties are Orange-shaped and include Cranstone's Excelsior (Highly Commended), a very large and mild Portugese variety and one of the parents of Ailsa Craig; Premier (Award of Merit) and Record, two grand Onions, and very reliable for exhibition purposes; James's Keeping, a flat-topped, brown, globe variety and the best long-keeper; Ailsa Craig, Prizetaker type (Highly Commended), quite distinct in form and colour and a good keeper; Dobbie's Golden Globe (Highly Commended), large and fine; Bedfordshire Champion (Highly Commended), the standard British globe variety; Wroxton, the finest brown globe variety; Up-to-Date (Highly Commended), a larger and browner form of Bedfordshire Champion; and Silver Globe (Award of Merit), silvery-white throughout and resembling Early Snowball, introduced from America about forty years ago.

The three following American varieties are the standard sorts in the United States:—Danver's Yellow Globe, Ohio Yellow Globe and Southport Yellow Globe. For some reason these have not been very satisfactory in Britain during the past seven or eight years.

The best oblong-globe varieties are Ailsa Craig (Highly Commended), original strain. This superb variety was raised by Mr. David Murray, gardener to the Marquis of Ailsa, and was introduced by Mr. Henry Deverill, of Banbury, in 1887. It is the result of a cross between Cranstone's Excelsior and Danver's Yellow Globe. Bulbs of the selected strain have been produced weighing 4 lbs. each. Cooper's Density (Highly Commended), pale yellow skin and white flesh, is a very solid and long-keeping variety.

The foregoing list, although somewhat lengthy, by no means includes all the meritorious varieties for spring sowing, but they have all been thoroughly tested in Great Britain and proved to be thoroughly reliable. Onions for autumn sowing come under a separate heading and will be dealt with later on. *S. B. Dicks.*

LATE PEAS.

Owing to force of circumstances we were obliged to sow our late Peas on prepared land, and place the rows no more than six feet asunder. They are not doing well. The continual wet weather experienced during August has not been in their favour. Mildew is very prevalent, and growth is not healthy. I have always endeavoured to have late Peas in isolated rows in an open position. Grown thus they receive the full benefit of the sun and air, and are not so liable to the baneful attacks of mildew. With trenches prepared as for Celery and the seeds sown at intervals during June, good pickings should be provided late in the season. The variety Autocrat has a strong constitution and handsome dark green pods, which are freely produced. In many gardens late Peas need protection from birds. *C. Ruse, Hyde Gardens, near Luton.*

HOME CORRESPONDENCE.

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Dutch Bulbs and Dutch Competition.—I wonder if employers recognise the importance of buying bulbs at home? Clearly, the principle of sending to Holland is unsound from more than one point of view. In the first place, the distribution of first-class bulbs by English houses entails employment for many hundreds of hands in an otherwise dull season of the year, from a trade standpoint; and secondly, the pick of all Dutch bulbs is generally sold to firms on this side of the water, whilst the remainder are kept for retail distribution, mainly through the media of auction rooms, both in Holland and in this country. The gardener who is commanded to send abroad knows this full well, but loyalty prevents him from objecting, although it goes very much against the grain to be obliged to resort to such practices, which, alas, are fast becoming general. It may be that bulbs, imported direct from Holland, or obtained from auction sales, turn out satisfactorily, but in the majority of cases, the reverse obtains, and very often the gardener is blamed for the inferior results. Many so-called bulb growers in Holland are simply merchants or agents, indeed, the largest cultivators, who supply our best English firms, would never deign to send bulbs to a retail customer in this country. Many, who are in the habit of sending to Holland direct, express themselves as satisfied with the results obtained; but I am confident that if they compared their results with those given by bulbs from an English house of good repute, they would be surprised at the difference shown at the time of blooming *Scrutator.*

Catalogue Descriptions.—In looking through a couple of catalogues, both supposed to be reliable, I find the following:—(No. 1) Arbutus Andrachne, white flowers in May; (No. 2) Arbutus Andrachne, flesh-coloured flowers; (No. 1) Clematis alpina (Atragene austriaca), pale blue; (No. 2) Clematis alpina (Atragene), flowers pink; (No. 1) Guevina Avellana, coral fruits; (No. 2) Guevina Avellana, blue fruit. How far I could continue the differences I do not know as I have not sufficient time to discover. In drawing attention to these diverse descriptions I wish to point out how very confusing and even misleading they are to persons who are not well acquainted with shrubs. As to the descriptions themselves it appears to indicate carelessness on the part of the compilers. I trust this note may cause at least some nurserymen to examine their lists and not leave the proof-reading to junior clerks. *J. Hill, Totnes Road, Paignton, South Devon.*

Apple Orchards in Devon.—It was quite refreshing to read your Torquay correspondent's note on the above subject (p. 202), especially at a time when the chief interest in his district appears to be that of building. I would suggest, however, there are other reasons for neglect besides that of a tenant being afraid to improve the orchards because the landlord may raise the rent. I consider the chief cause is ignorance in regard to pruning and thinning-out on the part of both the landowners and the tenants. Both when they obtain a good pruner (which is seldom) will probably interfere and imagine the tree is being ruined. Then, also, a pruner is often called in about five years too late, and is expected to form a shapely tree out of a mass of crossed branches or a tree that has had about six inches tipped off every shoot (regardless of buds or leaders) religiously year after year. These conditions are seldom found in Kent or Worcestershire. Again, some farmers in Devon find it more profitable to cultivate the acquaintance of rich, paying guests than to cultivate their land and orchards. Perhaps that may be still another reason. *Agrarian.*

SOCIETIES.

DEESIDE FIELD CLUB.

The latest excursion of the members of this club was to Dunecht, the beautiful Scottish home of Lord and Lady Cowdray. There was an attendance of over 350, and in glorious weather the party was led through the lovely gardens, the woods, the fish hatchery, the finely equipped forest nursery, and inspected the vast improvements which have been made on the estate during the past few years. These latter have involved the expenditure of thousands of pounds, and when completed according to plan will make the mansion and estate of Dunecht one of the most desirable landed possessions in this country.

Lord Aberdeen, as president of the club, led the way, and he was accompanied by Lady Aberdeen, the Marquis and Marchioness of Huntly and many other well-known ladies and gentlemen. Viscount and Viscountess Cowdray gave the members a warm welcome, and attended the business meeting. Here the chief item was an address by Mr. W. Douglas Simpson, D.Litt., F.S.A.Scot., on "Dunecht as an Epitome of Scottish History," in the course of which he showed that though Dunecht was a sequested district, rarely mentioned in the general narrative of Scottish history, yet it had reacted to the major influences affecting the national development, and the story of human endeavour in that quiet district, as revealed by archaeological material and written record, threw many an interesting sidelight on the great inter-secular processes that had made the Scottish people what they were. Dr. Simpson then proceeded to speak of the many impressive examples of the bronze age which existed in and around the parish of Echt. These included the stone circles at Wester Echt, Gask, Cullerlie, Nether Corskie, and -finest of all—Sunhoney, with its eleven great pillars and its enormous recumbent stone. The areas of these megalithic monuments, when excavated, always yielded burials of the bronze period. About 600 B.C., the use of iron was introduced, and at this period the inhabitants of Scotland were a highly civilised race, skilled in various arts and crafts, and distinguished particularly by their constructive genius. An outstanding memorial of that genius was the Barmekin of Echt, a great hill fort, with five concentric lines of defence, and its elaborate system of defending entrances. This great fort was not only a striking example of the technical skill of its ancient builders, but it told of the growth of those political conditions which created the Scottish nation. Much more did Dr. Simpson tell of the history of the countryside in which the club had gathered, and drew from Viscount Cowdray the remark that he had no idea that that part of the country had ever been the centre of Scotland. He had been delighted with Dr. Simpson's address, and hoped it would be included in the Club's magazine. The visitors were also taken through the Chapel, the magnificent library, with its superb collection of pictures, the Japanese corridor, with its ornate fittings and wealth of Eastern products, etc.

NATIONAL CHRYSANTHEMUM.

September 8.—The Floral Committee met on this date at the Royal Horticultural Hall when Mr. H. Woolman, Shirley, near Birmingham, was an extensive exhibitor and his group of finely grown flowers was awarded a special vote of thanks. The following awards were made to novelties:—

FIRST CLASS CERTIFICATES.

Shirley Bronze.—One of the smaller early-flowering Japanese varieties. The colour is bright, clear bronze and the flowers are of elegant form. Shown by Mr. H. Woolman.

Kathleen Wells.—This variety has very graceful, white flowers of medium size and Japanese form. The florets are moderately broad and of sufficient substance to render the flower suitable for market use. Shown by Messrs. W. WELLS AND CO.

COMMENDATION.

Guinea Gold.—A charming, early-flowering variety with medium-sized flowers of pleasing shape and bright old-gold colouring.

Sunburst.—A very attractive variety with flowers of deep gold colouring that light up brightly in sunshine or under artificial light. These two varieties were shown by Mr. H. WOOLMAN.

SEPTEMBER 22.—On this date the Floral Committee met in the Music Gallery at Holland Park Hall, when the following awards were made:—

FIRST CLASS CERTIFICATES.

Wembley.—A showy variety with medium-sized flowers of pleasing Japanese form and rich ruby-crimson colour.

Silver Queen.—In this early-flowering variety the flowers are of quite good size, the outer florets reflexing and the central ones incurving slightly. The colour is light rose-pink with silvery reverse. Both these varieties were shown by Mr. H. WOOLMAN.

Salmon Profusion.—The disbudded blooms of this variety exhibited were of capital size and good form. The variety is apparently a sport from Pink Profusion and, we understand, originated with the Messrs. Batchelor of Knaresborough, Yorkshire. The colour is light salmon with faint violet tinting at the tips of some of the florets. Shown by Mr. W. YANDELL.

Mrs. Phil Page.—This is a handsome reddish-bronze variety and in all but colour an exact counterpart of the golden-bronze variety Mrs. Jack Pearson. Shown by Mr. PHILIP LADDS.

Citron.—An early-flowering, single variety of medium size and with two or three rows of broad florets which are soft canary-yellow rather than the Citron colour which the name suggests. It is certainly one of the best yellow, early-flowering, single varieties. Shown by Messrs. W. WELLS & CO.

COMMENDATION.

Brilliancy.—In this early-flowering variety the blooms are of medium size and pleasing reflexed, Japanese form. The colour is bright bronze with a yellow reverse. Shown by Mr. H. WOOLMAN.

BRITISH FLORISTS' FEDERATION.

AT a meeting of the Market Floral Committee of the British Florists' Federation held at Messrs. Monro's Salerooms, Tavistock Street, Covent Garden, on Monday, September 22, Mr. W. E. Wallace presided, and Chrysanthemums were the only subjects brought forward. The following awards were made:—

FIRST CLASS CERTIFICATES.

Chrysanthemum Mrs. Jack Pearson.—A variety of reflexed Japanese type and very early flowering. Flowers have been placed on the market so early as the middle of July and the supply has continued to the end of September. The flowers are of bright golden bronze, which is effective during the day time as well as in artificial light. It is suitable alike for disbudding and for spray blooms (see Fig. 31, *Gard. Chron.*, Feb. 3, 1923). As members of the Floral Committee had inspected the variety growing the First Class Certificate was awarded unanimously.

Chrysanthemum Mrs. Phil Page.—This is a rich reddish-bronze counterpart of the former variety and is equally good disbudded or in spray form. This variety had also been inspected growing and received a unanimous award. Both varieties were submitted by Mr. PHILIP LADDS, Swanley Junction, Kent.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FRIDAY, SEPTEMBER 5.—Committee present: The Rev. J. Crombleholme (in the Chair), Messrs. R. Ashworth, A. Burns, A. Coningsby, D. A. Cowan, J. Evans, G. Giles, Capt. W. Horridge, J. Howes, A. Keeling, J. McCartney, F. K. Sander, E. W. Thompson and H. Arthur (Secretary).

FIRST-CLASS CERTIFICATES.

Odontoglossum crispum Viola, one of the finest forms of the type, with flowers of clear white, heavily blotched rosy-lilac. From S. GRATRIX, Esq.

Odontioda Zenobia, Edgemoor variety (*Odta. Charlesworthii* × *Odm. percultum*), a flower of bright reddish crimson. From A. HANMER, Esq.

Odontoglossum Aphrodite, Haddon House variety (*eximium* × *President Poincare*), an exceptionally fine flower, beautifully marked; rich claret, shaded rosy-lilac. From P. SMITH, Esq.

AWARDS OF MERIT.

Odontoglossum crispum Duke of Lancaster, Oncidioda Cooksoniae magnifica, and Cattleya Dupreana magnifica. From S. GRATRIX, Esq.

Cattleya Venus var. Enchantress. From A. HANMER, Esq.

GROUP.

S. GRATRIX, Esq., West Point (gr. Mr. J. Howes), was awarded a Silver-gilt Medal for a group in variety.

FRIDAY, SEPTEMBER 19.—Committee present: The Rev. J. Crombleholme (in the Chair), Messrs. R. Ashworth, A. Coningsby, J. Cypher, J. Evans, J. Howes, A. Keeling, J. McCartney, C. Losh-Thorpe and H. Arthur (Secretary).

FIRST-CLASS CERTIFICATES.

Cattleya Princess Ileana (*Lueddemanniana alba* × *Myra Peeters*), a variety with pure white sepals and petals and lemon-yellow throat. From S. GRATRIX, Esq.

Odontoglossum crispum Margaret Smith, one of the finest white forms yet seen, with large round flowers of good substance; the lip is flat with a deep chocolate blotch. From P. SMITH, Esq.

Brasso-Laelio-Cattleya Thyone var. Excelsior, a bright orange-yellow flower with a deep orange throat and lip tipped with rose colour. From Mr. J. EVANS.

AWARDS OF MERIT.

Odontoglossum Krameri. From J. MCCARTNEY, Esq.

Odontoglossum Col. Leith var. punctatissimum (*Rossii* × *Uro-Skinneri*) *and Cypripedium elegantulum* (*Curtisii Sanderae* × *Alma Gavaert*). From Messrs. KEELING AND SONS.

GROUPS.

S. GRATRIX, Esq., West Point (gr. Mr. J. Howes) was awarded a Gold Medal for a group of miscellaneous Orchids.

A large Silver Medal was awarded to Messrs. CYPHER AND SONS, Cheltenham, for a group.

CATALOGUES RECEIVED.

Bulbs.

ARMY AND NAVY CO-OPERATIVE SOCIETY, LTD., 105, Victoria Street, Westminster, S. W.
WM. POWER AND CO., Waterford, Ireland.
HURST AND SON, 152, Houndsditch, E. 1. (Wholesale).

CLIBRANS, LTD., Altrincham.—Fruits, Roses.
SALE AND SON, LTD., Wokingham, Berkshire.—Fruit trees, Roses, trees, and shrubs, etc.
DANIELS BROS., LTD., Norwich.—Fruit trees, Roses, bulbs, etc.
D. PRIOR AND SON, LTD., Colchester.—Roses.
T. BATH AND CO., LTD., Savoy Street, Strand, W.C. 2.—Bungalows, summer houses, and garden sundries.
H. LANE AND SON, Berkhamsted.—Roses, fruit trees, Conifers, etc.
SHEPPARDS, Shawhurst Nursery, Hollywood, near Birmingham.—Herbaceous plants, alpines, Roses, etc.
R. VEITCH AND SON, Exeter.—Hardy trees, shrubs, etc.
MORLE AND CO., LTD., 150, Finchley Road, N.W.—Roses, herbaceous plants, fruit trees, etc.
ALLWOOD BROS., Wivelsfield Nurseries, Haywards Heath, Sussex.—Carnations.

ANSWERS TO CORRESPONDENTS.

POTATOS AND CABBAGES: *J. P.* Of the two specimens of Potato plants sent for examination, the one showing the crinkled foliage and dwarfed growth was affected with leaf curl disease; the other was affected with "black-leg" disease. The cause of the former trouble is a little obscure and "seed" saved in the south of England is very liable to become infected. It is advisable to use good fresh "seed" from Scotland every year. Black-leg is a bacterial disease and generally appears from June onwards. Badly infected plants should be dug up and burned and care should be taken, when the crop is harvested to store the tubers in a well ventilated, dry place. The woodiness in the young cabbage plants appears to be due to bad rooting conditions. Keep the soil well hoed and watered and sprinkle a little sulphate of ammonia round the base of each plant.

RYE GRASS ATTACKED BY FUNGUS: *B. O. B.* The specimens of Rye Grass are affected with the fungus Puccinia graminis. It will be advisable to withhold all nitrogenous manures and dress the lawn with a mixture of three parts superphosphate and one part sulphate of potash, applying this at the rate of about two ounces per square yard. Keep the lawn closely mown.

SLEEPY DISEASE OF TOMATOS: *W. O. L.*—The wilting and collapse of the Tomato plants is due to infection by the root-fungus Verticillium albo-atrum. It is impossible to save a badly diseased plant. Your best course is to shade the house slightly by applying a light dressing of whitewash. Care is also necessary in watering, applying only sufficient for the plants requirements. The average temperature of the house should be raised to between 75° to 80°. It is also advisable to add fresh soil round the base of the plants so as to encourage new root formation.

STRAWBERRIES NOT FRUITING: *J. H.* There is no disease present on the Strawberry specimen sent for examination. There appears to be gross leaf formation made at the expense of fruit development. This condition may be brought about by the soil being too rich in nitrogenous food. On the other hand stocks are known to run blind and we are inclined to think that you would be wise to raise or procure a new stock, runners being taken from normal one-year-old plants.

Communications Received.—Hortl.—V. F. P. D.—C. de M.—Mrs. G.—G. K.—P. S.—J. Y.—A. H. G.—F. D.—T. W. S.—C. C.—H.—H. F. Z.—G. L.—H. A.—J. S. C.—E. E. H.—L. M.—R. C. G.—K. W.

GARDENING APPOINTMENTS.

Mr. George Bellamy, previously gardener to F. J. KITSON, Esq., at Gledhow Grove, Chapel Allerton, Leeds, as gardener to S. MCLEAN MAY, Esq., Athill Court, Adel, Leeds.

Mr. Henry Boyd, late head gardener to LORD HAMILTON OF DALZELL, Dalzell, Motherwell, as gardener to Captain LIDDELL GRAINGER, Ayton Castle, Ayton, Berwickshire. [Thanks for 2s. 6d. for R.G.O.F. Box.—EDS.]

Mr. Wm. Clinton, as gardener to F. J. REEVES, Esq., Bearnett House, Penn, Wolverhampton. (Thanks for 2s. for R.G.O.F. Box.—EDS.

Mr. F. W. Church, for fourteen years gardener to the late E. S. HANBURY, Esq., and for the past nine years gardener to the late H. J. KING, Esq. at Poles Park, Ware, Hertfordshire, as gardener to Sir PHILLIP SASSOON, Bart., M.P., Trent Park, New Barnet.

Mr. C. E. Howes, previously for eleven years gardener to C. RIGDEN, Esq., Court Street House, Faversham, Kent, and recently gardener to F. A. HAWLEY, Esq., at Bunce Court, Otterden, near Faversham, as gardener to the same gentleman at Lees Court, Sheldwick, Faversham.

THE
Gardeners' Chronicle

No. 1972—SATURDAY, OCTOBER 11, 1924.

CONTENTS.

Alpine Garden—
  Polygonum vaccinifolium 245
  Sedum coeruleum ... 245
  Verbena venosa ... 245
Annuals for greenhouse and conservatory decoration 252
Apple crop, the Canadian 243
Baker, Mr. Frederick ... 244
Books, notices of—
  First Book of Grasses 252
  Rhododendrons ... 252
  Botanical Magazine ... 243
Bougainvillea Mrs. Butt 243
Bulb Garden—
  Nerine Bowdenii ... 254
Forestry at the British Empire Exhibition ... 254
Forestry Commission, the 244
Freesias planted out ... 255
Fruit crops, remarks on the condition of the 254
"Gardeners' Chronicle" seventy-five years ago 245
Gladioli, quality in ... 248
Gordon-Lennox Cup, award of the 244
Horticultural education in Hertfordshire ... 251
National Sweet Pea Society 245
New Zealand Institute of Horticulture ... 243
Œnothera 249
Orchid notes and gleanings—
  Cymbidium Mona ... 248
  Miltonia hybrids ... 247
  Vanda Hookeriana ... 247
Pineapple crowns, checking the growth of ... 255
Platanus digitata and P. cantabrigensis ... 250
Plants in bloom on New Zealand's shortest day 252
Potato tests, Scotch seedling 244
Potatos, black heart of 244
Rhododendrons ... 253
Rose garden—
  A method of propagating Roses ... 249
  Autumn Roses at Kew 249
  Roses for arches ... 249
Rose Dorothy King ... 245
Seed bed, diseases of the 243
Societies—
  Cardiff and County Horticultural ... 258
  Royal Horticultural 255
Trees and Shrubs—
  Eucryphia pinnatifolia 253
  Helianthemum lunulatum 253
Week's Work, the ... 246
Wisley, notes from ... 250

ILLUSTRATIONS.

Baker, Mr. F., portrait of 244
Platanus cantabrigensis: fruiting branch of, 251; leafy branch, 253; P. digitata: fruiting branch of, 251; leafy branch 250
Vanda Hookeriana 245, 247

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 49·3.

Actual Temperature:—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 1, 10 a.m.: Bar. 29·5: temp. 56°. Weather, showery.

Diseases of the Seed Bed.

The careful cultivator who is able by his skill to control soil conditions and choose his time for sowing is not likely to be troubled over much by the loss of seedlings in the seed-bed. But if economic conditions prevent the taking of the necessary precautions in making the compost and in tending the seed-bed—and sometimes even when all precautions have been taken—disease may declare itself among the seedlings with disastrous results. For the enemies of seedling plants are numerous and "damping-off" is caused not by one parasitic, soil-haunting fungus only—Pythium de Baryanum, but by any of the numerous genera of pathogenic fungi—Rhizoctonia, Sclerotinia, Botrytis, Fusarium, etc. For example, Rhizoctonia solani may cause the damping-off of seedling Cabbage and Cauliflower and other plants of the Brassica tribe. The frequency of losses of this kind has led Messrs. Gloyer and Glasgow* to study the efficacy of fungicides applied to the soil of seed-beds in preventing "damping-off" diseases. As a result of their experiments it would seem that in mercuric chloride the gardener has a means of preventing many of these diseases. They find that a solution of mercuric chloride (1 oz. to 10 gallons) applied to soil heavily infected with Rhizoctonia is effective in preventing the infection of seedling Cabbage plants. Having reached this conclusion the authors tested the value of this substance in preventing other plant diseases. They find that it is a sure means of preventing club-root in seedling Cabbages. Needless to say the application of mercuric chloride or other fungicide cannot cure infected plants, but, if a solution of mercuric chloride be added to the seed bed before sowing, the disease does not declare itself. The strength used in preventing club-root was one part of mercuric chloride in 1,280 parts of water though subsequent experience showed that one part in 1,200 is sufficient. Another disease which has been checked by similar means is the root-rot of Larkspurs due to Sclerotium delphinii. The authors are properly cautious in recommending mercuric chloride for all kinds of seed-bed diseases. They point out that each kind must be made the subject of experiment and that in particular cautious tests on a small scale of different strengths of solution must be made before a method is applied on a large scale. It is interesting to observe that the effects of mercuric chloride seem to persist for some time in the soil. Even when the material has combined in the earth with the clay constituents of soil the poison appears still to be capable of exercising fungicidal action. It should be added that in the case of bacterial blight of Delphinium the best method consists in cutting the plant to the ground and sprinkling over it a solution containing one grain of mercuric chloride and one grain of nitrate of soda dissolved in three-and-a-half pints of water.

The Canadian Apple Crop.—The Canadian Apple crop is estimated as equivalent to 2,929,000 barrels, as compared with 4,315,000 barrels in 1923. In Ontario considerable damage has been done to the Apple crop by insect pests, while in Nova Scotia hot, dry weather experienced during the greater part of August retarded the growth of the fruit.

New Zealand Institute of Horticulture.—The second annual meeting of the New Zealand Institute of Horticulture was held in Wellington on August 5. Great interest has been taken in this important movement, which should be of the greatest benefit to the Dominion. The Hon. W. Nosworthy, Minister of Agriculture, patron of the Institute, welcomed the delegates, who came from all parts of the Dominion, and represented every class of horticulture. Dr. L. Cockayne, F.R.S., was elected Honorary Botanist to the Institute, and also Dominion President. Among the Vice-presidents elected were Sir James Gunson, Mayor of Auckland; Professor T. H. Easterfield, of the Cawthron Institute, and Professors H. B. Kirk and C. Chilton, of the New Zealand University. The most important matter dealt with was horticultural education, and a committee consisting of Dr. Cockayne, Professor H. B. Kirk and Mr. P. Black, Director of the Palmerston North Gardens, was appointed to report to the next meeting of the Council on the best means to be adopted to promote horticultural education in the primary, technical and secondary schools of the Dominion. A remit dealing with the thorny subject of protection for the hybridist was referred to the Executive Committee for further consideration. The Institute hopes to promote the interests of horticulture in its widest sense, to extend the love of gardening throughout New Zealand, and to be the court of appeal regarding horticultural nomenclature. Mr. George A. Green, to whom the Institute owes so much, was appointed Dominion Secretary, and Mr. H. Baillie, Hon. Secretary to the Executive Committee.

Bougainvillea Mrs. Butt.—*Kew Bulletin*, No. 8, 1924, gives some particulars as to the origin of this claret-coloured variety of Bougainvillea spectabilis. It was discovered in 1910 by Mrs. R. V. Butt, wife of the manager of the Colonial Bank, Trinidad, growing in a priest's garden near Carthagena, Columbia. Some cuttings were procured by Mrs. Butt, and they were rooted by the curator of the Botanic Gardens, Trinidad, in which country the plant has become a great favourite. The ease with which this fine Bougainvillea may be propagated from cuttings is a great point in its favour, for some of the Bougainvilleas, such as B. lateritia, can only be propagated with great difficulty from root cuttings. There is a large specimen of B. Mrs. Butt in No. 5 Greenhouse at Kew, this being one of the consignment sent to Kew from Trinidad a few years ago. The Kew plant flowers freely and retains its good colour under greenhouse treatment. This new Bourgainvillea is also suitable for cultivation in small pots for rooted cuttings will flower when only a foot or so high.

"Botanical Magazine."—The new issue of the *Botanical Magazine* (Volume CXLIX, part IV) has appeared, and contains descriptions and illustrations of eleven interesting plants. The first of these, Philodendron teretipes (tab. 9013), is a strong growing epiphyte, a native of Columbia, remarkable for its large-bladed leaves, which stand out almost at right angles to the red stems, while the large spathe is a rich cream colour, with a big crimson blotch at the base, round the spadix. A double-page illustration is devoted to this species. Rhododendron apodectum (tab. 9014) is, as its specific name suggests, a "welcome" species. It was discovered by Forrest on several occasions, and has proved hardy in the South of England, as it fortunately makes its growths when the danger of frosts is over. The flowers, grouped in two's and three's, are tubular, somewhat fleshy, and of a brilliant scarlet colour tinged with yellow. Dendrochilum uncatum (tab. 9015), an Orchid which has long been in cultivation in gardens, was described in *The Gardeners' Chronicle* so far back as 1881. It has semi-pendent spikes of small, greenish flowers, familiar to Orchid growers of the old school; it is a native of the Philippine Islands. Pieris taiwanensis (tab. 9016) is a handsome shrub from Formosa, and a fine addition to the known Ericaceous plants. It was described in *The Gardeners' Chronicle*, February 3, 1923, p. 63. Berberis morrisonensis (tab. 9017) also hails from Formosa, and is an attractive Barberry, not only by reason of its yellow flowers, which are freely produced during June, and the subsequent brilliant red and slightly translucent berries, but particularly because in autumn the leaves turn to flaming scarlet and gold. Primula cardiophylla (tab. 9018) comes from the Sikkim Himalaya, where it has been found at an elevation of from 3,300 metres to 3,600 metres. It is a rosulate perennial with rounded, heart-shaped leaves carried on stout, long stems, while the scapes rise well above the foliage and bear a number of mauve-purple, golden-eyed flowers. Corokia buddleioides (tab. 9019), is one of four species constituting the genus Corokia, which is confined to New Zealand and Chatham Island. It is a graceful shrub with small, yellow flowers, borne in leafy, terminal panicles. The leaves are slender, linear-lanceolate and tough; bright green above and silvery beneath. The younger branches are also covered with silvery hairs. Picea Glehnii (tab. 9020) becomes a tree, rising to a height of forty metres, in its native Japan, while the trunk is covered with reddish or chocolate-brown bark, making it a striking feature. The male catkins are

---

* Cabbage Seed-bed diseases and Delphinium root rots. *Bulletin*, No. 513. February, 1924. New York State Agricultural Experiment Station, Geneva.

yellow or brownish, and the female cones, when in flower, are dark or bluish-violet with red edges to the scales. This species has borne cones in the late Sir Edmund Loder's garden at Leonardslee (see *The Gardeners' Chronicle*, February 21, 1929, p. 89). It appears to have been first discovered by Peter Glehn in 1861, while in 1877 it was discovered by Charles Maries when collecting for Messrs. James Veitch and Sons, and he was the first to send seeds home to this country. Viola elegantula (tab. 9021), is a low-growing species with narrowly divided leaves and rounded flowers; these are reddish-violet, with a paler, gold-tinted, purple-veined area at the base of the lower segment. The species was discovered in 1850, and is a native of the Balkans of Bosnia and Herzegovina. Philadelphus Delavayi (tab. 9022) is a handsome Chinese species discovered by Pére Delavay in Yunnan in 1887. It has been found quite hardy in Mr. G. Loder's garden at Wakehurst, Ardingly, Sussex, where it produces its fragrant flowers in June. The four petals are pure white, and their whiteness is emphasized by the bronzy-purple colour of the calyces. Ouratea flava (tab. 9023) is the subject of the final illustration. This brilliantly coloured shrub is widely distributed from Sierra Leone to Central Angola, and probably extends inland beyond the great forest belt. It was discovered over a hundred years ago, but appears to have been in cultivation in the Royal Botanic Garden at Edinburgh only since 1914. The bright yellow flowers are borne in loose terminal panicles consisting of long-spreading branches, on which they are grouped in clusters of three to five. In is interesting to observe that the calyx segments are also yellow when the flower is open, but persist and become blood-red when the small, purplish-black fruits are formed. The leaves are thin and very tough, bright green, and not unlike those of the Sweet Chestnut in form.

Scotch Seedling Potato Tests.—On the invitation of Messrs. McGill and Smith, Ayr, a representative company of growers, merchants and experts of the Board of Agriculture visited Alloway Mill recently for the purpose of judging the merits of the new seedling Potatos raised on the firm's experimental grounds. The vote was taken by card and when examined it was found that the winner was a vigorous early variety which had matured in 112 days; a cross between Abundance and Majestic and round in shape, this variety was considered to be a possible successor to Epicure. The second in order was a Knight-Flourball cross, which came under the category of a useful second-early variety, while an Irish Chieftain-Flourball cross was placed third. The best main crop variety was a Templar seedling-Majestic cross, which was given the next position in the order of merit, and it was followed by a Majestic-Fiftyfold cross. These and all the other samples had been grown on sandy loam. In the discussion which followed, after luncheon, Mr. T. Anderson, of the Board of Agriculture, emphasised the difficulty of evolving a generally meritorious Potato as there was apt to be an unknown factor in almost every variety. A seedling, he pointed out, might do well in its own birthplace and still be far from effective for all-round use. Epicure was a case in point. That variety was wonderful in the West of Scotland, but it was sometimes unsuitable elsewhere. Mr. J. Watson considered the cooking quality should never be lost sight of. Mr. J. Hannah, Girvan Mains, admitted that the grower always worked for a profit, and he commented on the little that had been done in trying to reduce pests. The Potato was supposed to be very fond of potash, but he thought that potash was overdone as a manure. Mr. John Gibb, Bishopton, observed that most farmers paid too little attention to what they grew, and even Potato merchants were poor judges of varieties. He also took exception to the notion that red soil necessarily gave quality. Mr. Adam Millar of the Board of Agriculture, advocated a more severe system of rogueing, and Mr. O. Brien, of the West of Scotland Agricultural College, delivered an interesting address on the diseases of the Potato.

Mr. Frederick Baker.—Recently appointed Superintendent of the Portsmouth Parks and Open Spaces, Mr. F. Baker commenced his horticultural training at Mathern Palace and Mounton House Gardens, near Chepstow, Monmouthshire, both well-known and picturesque gardens then owned by H. Avray Tipping, Esq., an acknowledged authority on horticultural matters and joint author of *Gardening, Old and New*. For six years Mr. Baker was employed as journeyman at Mount Ballan Gardens, near Chepstow, from which gardens Chrysanthemums, vegetables and fruits were shown with great success at Bristol, Cardiff, and other west of England exhibitions. After obtaining further experience in Shropshire and Monmouthshire, he secured a position in the Cardiff Parks under Mr. W. W. Pettigrew and while serving there became foreman of the Pleasure Grounds at Roath Park, a position he also occupied under Mr. A Pettigrew, when the latter succeeded his brother in the control of the Cardiff Parks. In 1920 Mr. Baker was chosen from a large number of applicants for the position of Park Superintendent at Wigan and during the four years he remained there he carried out numerous alterations and extensions which gained for him the appreciation of the Parks' Committee of this northern town. Mr. Baker has carefully studied the duties of a park superintendent from all points of view and the fact that he holds the National Diploma in Horticulture (Public Parks Section) and the Royal Horticultural Society's First-Class Certificate for general horticulture, as well as certificates for geology, botany and horticulture, shows that he has taken full advantage of his opportunities and is able to teach as well as to practice.

MR. F. BAKER.

The Gordon-Lennox Cup for Fruit.—The Gordon-Lennox Cup, which was offered at the R.H.S. Fruit and Vegetable Show for the most meritorious display of fruit by an amateur was won by Sir Charles Nall-Cain (gr. Mr. T. Pateman), Brocket Hall, Hertfordshire. His exhibit contained about twenty-five dishes of culinary and dessert Apples, chief of which were Laxton's Superb, Ellison's Orange, Egremont Russet, Peasgood's Nonesuch, Gascoyne's Scarlet, and Rev. W. Wilks. Of Pears there were good samples of Marguerite Marillat and Doyenné du Comice, while Plums were represented by the varieties Golden Drop, Prince Englebert, and Coe's Violet. There were also well finished bunches of Muscat of Alexandria and Black Hamburgh Grapes and dishes of Comet Red Currant and Heytor Raspberry.

Legacy to a Gardener's Widow.—The late Mr. James Brindley Sherwin of The Woodlands, Lordship Lane, Tottenham, who died on August 15 last, leaving an estate valued at £42,667, left £1,000 upon trust for the benefit of the widow and children of his late gardener, Mr. William James Windmill.

A Novel Narcissus Competition.—The Spalding and District Bulb Growers' and Market Gardeners' Association has arranged a competition amongst its members for the best plot of one-year-down Narcissus bulbs treated by the hot water system now generally adopted by the growers against the eelworm pest. Messrs. Barford and Perkins, Limited, the makers of a new type of bulb sterilisers, are the donors of the prize money, and the conditions of the competition are that the bulbs must have been treated in a steriliser of their own manufacture. There are two classes, one set aside for growers of over five acres of bulbs, and the other for growers of under five acres of bulbs. There are two cash prizes in each class.

Black Heart of Potatos.—The *Quarterly Bulletin*, Vol. 6, No. 4, issued by the Agricultural Experiment Station, Michigan Agricultural College, contains an article on "Black Heart of Potatos," by Mr. G. H. Coons, of the Botanical Section of the College. This complaint appears to be the one known as "sprain," a somewhat obscure disease which is frequently found in Potatos after they have been stored. It has long been known that this is not due to organic fungus, but the breaking down of certain of the cells in the interior of the tuber, causing the discoloration and blackening of the flesh. The author states that the occurrence of this condition indicates faulty aeration in the storage and, it has been explained, is due to the changes in the tissues caused by over-heating and an atmosphere devoid of sufficient oxygen to meet the demand of the respiring Potatos. Mr. Coons states that affected tubers should not be used as seed sets, but that tubers that show only a slight amount of surface breakdown are suitable for purposes of propagation. He concludes by stating that improper handling of seed stock, the use of blackheart tubers and the planting in hot furrows are common causes of the ragged appearance of the Potato fields in Michigan. The necessity for providing suitable ventilation for Potato pits is obvious.

Rhododendrons in Flower at Kew.—Whether it is owing to the sparse flowering this spring or to the excessive moisture we have experienced this year or a combination of these factors, the Rhododendrons at Kew have, we venture to think, never looked so vigorous and healthy. What, however, is more interesting, is that the flower-buds are very forward and given a week or so of comparatively mild weather, with an absence of morning frosts, many of the specimens, especially of the Chinese species, will be making quite a show of bloom. There are already numbers of opened flowers on a few species, produced in such a quantity that they may be distinguished and admired even from a distance of several yards. These include the shrubby R. hippophaeoides lavender-blue; R. scintillans, purplish-lavender; R. impeditum, purplish-blue; R. chielanthum, rose-purple; R. flavidum, yellow; and R. oblongifolium, pale pink. With the exception of R. oblongifolium, all these species belong to the Lapponicum series and normally flower during April; it would be interesting to know if they are given autumnal blooms in other parts of the country. R. fastigiatum, another "lapponicum," is the only one we know which opens some of its flowers in the autumn, and we believe there is an early-flowering form of R. scintillans which blooms in January.

National Sweet Pea Society.—The Annual General Meeting of the members of the National Sweet Pea Society will be held at Essex Hall, Essex Street, London, at 3 p.m., on Tuesday, October 21st. Essex Sreet is at the Fleet Street end of the Strand, nearly opposite the Law Courts. The nearest railway station is The Temple, on the District Railway.

Rose Dorothy King.—On the occasion of the National Rose Society's autumn show held on September 11 and 12, Rose Dorothy King, one of the new varieties to which a Certificate of Merit was granted, was shown by Mr. J. Ernest King, Cyprus Road Nursery, Leicester. We regret that our reporter (see p. 203) inadvertently credited this variety to Messrs. S. McGredy and Son.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Plumbago Larpentae.*—Will you allow a few remarks on this calumniated plant? Every person conversant with decorative gardening is but too well aware how desirable are masses of blue, or any of the delicate approaches to that colour which the atmosphere seems to monopolise, and which are yet so necessary to complete the *tout ensemble.* The very promising accounts giving of Plumbago Larpentae by Messrs. Knight and Perry, who "sent it out" (as the phrase is), and by the leading floricultural journals at the period of its introductions, very generally led us to believe that the void not only was to be filled up, but in a manner that would put the fields of azure-blue above us to the blush; hence many became possessed of the plant, taxing their imaginative powers largely as to the effect it would produce, and as these sanguine ones were almost necessarily to some extent disappointed, they now as generally condemn the plant as "worthless," "not good for anything," etc. Now, while I admit having seen this plant, in the hands of some of these noisy ones, in a wretched looking state, I know instances in private establishments where it is now a gem of perfect beauty; these I could readily particularise were it proper to do so, but such a course is unnecessary, as I have this day seen at Messrs. Knight and Perry's nursery, in the King's Road, the original plant, of which, speaking cursorily, I should say it has several hundred flowers on it expanded, standing conspicuously forth from its lovely green foliage, and forming altogether an object resplendent with beauty. Those who, doubt the desirability of cultivating this charming plant should see the specimen I allude to. I can promise them much gratification therefrom, and will answer that their conviction of its desirability as an autumn plant for the conservatory, or for almost any conceivable situation, will be complete. *E. B. R., Lower Brook Street. Gard. Chron., October* 13, 1849.

Appointments for the Ensuing Week.—Monday, October 13.—Bath Gardeners' Society's meeting; United Horticultural Benefit and Provident Society's meeting; Tuesday, October 14.—Jersey Gardeners' Society's meeting. Wednesday, October 15.—Morley and District Paxton Society's meeting. Friday, October 17.—Eastbourne Horticultural Society's meeting.

Publications Received.—*The Distillation of the Essential Oils of Flowers and Herbs.* By C. Ainsworth Mitchell; *Bulbs and Tubers used in Medicine and Commerce.* Price 2s. 6d., post free. Both obtainable from Mrs. Grieve, Whins' Cottage, Chalfont St. Peter, Bucks. *White Clover, a Monograph.* By Adela G. Erith. Duckworth and Co., 3, Henrietta Street, W.C. 2. Price 18s. net.

ALPINE GARDEN.

POLYGONUM VACCINIFOLIUM.

A PLANT that will look cheerful in the garden during the climatic conditions which have prevailed during the end of September and the early part of October is one to be encouraged. Such a plant is the Whortleberry-leaved Polygonum, P. vaccinifolium. Growing in the retaining wall of a terrace at The Hammels, Boar's Hill, Oxford, the residence of Sir Frederick and Lady Keeble, this species is particularly charming. Its semi-pendent growth, pressed closely to the stone work, is abundantly furnished with burnished, ovate, bright green leaves, some of which are slightly tinted with red on the upper surface, but all have a paler hue beneath. The very tiny flowers are of a soft rose colour and packed closely together in slender, three-inch spikes, but the latter are so freely produced at this season of the year that the rich green leafage is merely a background for them. Although introduced from the Himalaya so far back as 1845, this hardy perennial has not yet attained the popularity it deserves as one of the most useful plants for cultivation in the rock garden or wall garden. *C.*

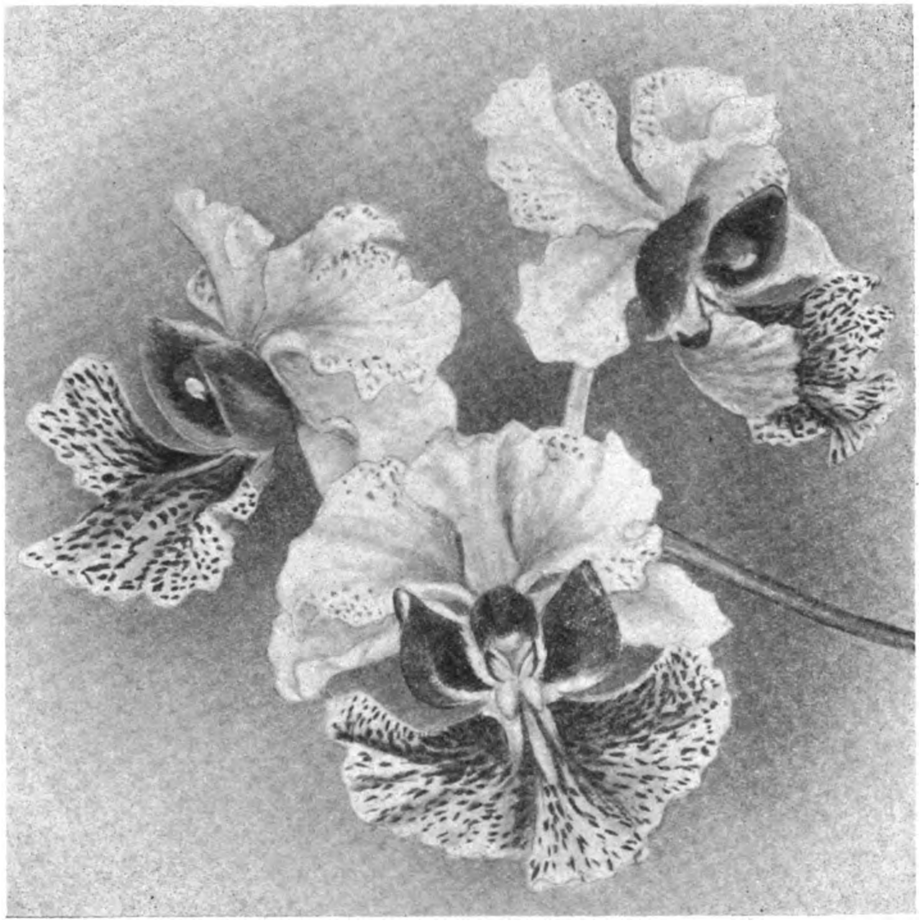


FIG. 88.—VANDA HOOKERIANA; FLOWERS WHITE AND PURPLE.

From a drawing by Miss N. Rogers.

ACHILLEA TOMENTOSA.

ACHILLEA tomentosa is a plant of considerable garden value, the yellow flowers being of glorious colouring. A colony of this Yarrow is most effective in the large rock-garden, and a single plant in the rockery of modest dimensions will be a noteworthy ornament for many weeks during the summer. *E.*

VERBENA VENOSA.

INTRODUCED from South America in 1830, Verbena venosa is not grown to the extent that it deserves. Much hardier than others of its race, it is valuable for forming a patch of colour in the rock garden or the hardy-flower border during the late summer and autumn. Under congenial conditions it will reach a height of two feet and freely produce its heads of purple flowers—that pleasing shade of purple through which a suspicion of lavender appears to run. The flowers last long and are produced in succession, only succumbing finally to the first considerable frost. For the higher reaches of the rock garden V. venosa is admirable, and it may be used to great advantage in summer bedding schemes. A rich, sandy loam suits the plants, and in a suitable position they are perennial. Propagation is effected by seeds or cuttings. *Ralph E. Arnold.*

SEDUM COERULEUM.

THIS charming species flowers at a season when choice dwarf alpines are not too plentiful in the rock garden. It is an annual, and forms a tuft from four inches to six inches high, furnished with fleshy, pale-green, cylindrical, sessile leaves, half-an-inch long, and of the same thickness as the much-branched stem. The flowers are blue, with a zone of white at the base of each of the petals. It is exceptionally free flowering, the plant having the appearance of being enveloped in a mist of blue. Apart from its value in the rock garden it may effectively be employed in the hardy-flower border, and in pots or pans in the cool greenhouse. *F. W. J.*

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Aërides, Angraecum, and Saccolabium.—Many of these plants that flowered early in the year will soon be completing their season's growth, and the supply of water at the roots should be reduced gradually. Although these Orchids never cease to make leaf growth, it is important that they should be given a short period of rest. When in active growth sufficient water should be afforded to keep the Sphagnum Moss green on the surface, but from now onwards through the winter months it may be allowed to dry to a greenish-yellow colour before water is applied. Angraecums that are in full growth, including A. sesquipedale, A. Eichlerianum, and A. pellucidum, still require plentiful supplies of water.

Laelia.—The dwarf-growing Laelia pumila is a useful plant at this season, and where coat-flowers are in request the blooms are especially appreciated. Plants thrive well in the cool house during the summer months, and if they are now placed in an intermediate temperature, and hung near the roof-glass, the sunlight will assist the flowers to open and favour the development of the new growths. If allowed to remain in the cool house when the nights are cool and damp, the flowers may become spotted and useless. White scale-insects are a great pest of these Orchids, and increase very rapidly if not removed. The plants thrive well when grown in a thin layer of Osmunda-fibre and kept moist at the roots all through their growing season.

Phalaenopsis.—Many of the Phalaenopsis will have finished making their leaves and during the shorter days they will require less water at the roots and the atmosphere should be kept on the dry side. After the roots become sealed at the tips the plants will only need water in sufficient quantities to prevent the leaves from shrivelling. During the growing season the Sphagnum-Moss on the surface of the receptacle was kept green and in a growing condition, but it should now be allowed to become quite dry before water is applied. During the winter months it is not advisable to dip the plants, but merely sprinkle the surface Moss and the sides of the basket occasionally, taking care not to allow water to remain on the foliage or in the centre of the plants. Sponge the leaves at intervals with tepid, soapy water.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Roses for Cuttings.—Roses of the Wichuraiana group and many others strike readily from cuttings inserted in the open ground so soon as the wood is ripened. The cuttings should be made from current year's growth about a foot long and inserted firmly within two or three inches of their tops.

Eremurus.—These handsome plants are well suited for the warm, sheltered nooks of the garden where they may be grouped in an informal way with a background of shrubs and foliage plants. They prefer a rich, well-drained loam and a sunny position. The present, or as soon as the young crowns have ripened their growth, is a good time for planting, and the sites should be thoroughly prepared beforehand—as once well planted they should not often be disturbed. The large, fleshy roots are extremely brittle and liable to injury and they should be carefully spread out on the prepared surface, covering them with soil so as to form a slight mound on completion to ensure moisture drawing away from the crown. The Eremuri will fully repay all the care given to them.

Gladiolus.—The corms of plants that have flowered may now be lifted even if the stems are still green. They may be tied in bunches and hung in an airy shed to dry for a few weeks. When the foliage has completely ripened it may be cut off with a sharp knife; after which the corms should be laid singly in trays to become thoroughly dried before storing them for the winter.

Tamarix.—Large masses of this graceful plant are particularly elegant in the garden, as the foliage is always attractive, and the fact that the plants flower in August and September when flowering shrubs are not plentiful makes it doubly valuable. Although it is considered to be a seaside plant it does equally well inland, but it has a preference for sandy soils. Cuttings inserted in nursery rows in early autumn strike readily and make strong plants in the second year.

Autumn tints.—The turning of the green foliage of trees and shrubs to tints of yellow, orange, scarlet and crimson creates beautiful autumn pictures in the garden no less effective than the flowering of many of the same subjects in the spring. The brilliance of colour depends somewhat on the season, but many trees and shrubs have a tendency to become tinted whatever the climatic conditions. Even in the present sunless year Cercidophyllum japonicum was a brilliant red so early as the second week in August, and Amelanchier canadensis had turned colour before the end of that month. Amongst other plants which seldom fail to give more or less brilliant colours are Crataegus Crus galli, several species of Prunus and Pyrus, Acer campestre, A. Ginnala, A. Schwedleri, Ginkgo triloba, Gleditschia triacanthos, Rhus Cotinus, R. laciniata, Tulip Tree, Liquidamber, Parrotia persica, Euonymus alata, E. europaeus, Berberis Thunbergii, B. concinna, B. Wilsonae, B. vulgaris, Spiraea Thunbergii, Viburnum Opulus, V. plicatum, and Vaccinium pennsylvanicum.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Light.—With the shortening days and decreasing sunlight, it will be necessary to take every possible measure to ensure that the maximum available light reaches all plants growing under glass. Shadings which have been painted on the glass during the summer should now be removed, in fact it will be well to wash the whole of the glass in the plant houses, both inside and out. Every effort should be made to make full use of all the sunshine we receive, and especially does this apply to the treatment of greenhouse Rhododendrons, Azaleas, and other hard-wooded plants at this time of year, and particularly so after a summer which has proved so deficient in sunshine as that of 1924. These plants when housed, therefore, should be placed in light sun-favoured houses to ensure the ripening of their wood and flower buds.

Ventilation.—It will be necessary to exercise great care in the ventilation of houses in which tender plants are growing. A sudden influx of cold air to a warm house is likely to prove very harmful to the occupants. Where it is necessary to afford ventilation, air should be admitted gradually, and in the case of span-roofed houses, the ventilators should be opened on the sunny or the leeward side only.

Pot Roses.—Roses intended for forcing should be cut back to prominent buds, but it is well not to prune the plants too severely. With a pointed stick remove carefully a goodly portion of the old soil from the pots, and top-dress the plants with rich, turfy soil containing bonemeal, making it firm with a rammer. Afterwards plunge the pots to their rims in coal ashes or peat moss litter, outside or in a cold frame, leaving them there until it is necessary to take the plants inside for forcing.

Seedling Plants.—Seedlings of Mignonette, Schizanthus, and other annuals which have been raised in pots for spring flowering should be thinned so soon as the young plants are large enough to handle. Slightly stir the surface soil with a pointed stick, afterwards sprinkling a little fine soil between and around the young plants, and placing the pots on a shelf near to the roof glass in a cool, airy house.

Primula sinensis.—Plants which have been grown in cool frames or pits will be benefited if they are now placed in a warm, light house. Primulas delight in a rather moist, warm atmosphere when approaching the flowering stages. A temperature of 55° to 60° with a little air, on all favourable occasions, will not be too warm at this time of year. Overcrowding of the plants, however, must be rigidly prevented. Primulas of the malacoides type should be afforded cool treatment for the present.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Renovation of Trees.—Trees that have borne heavy crops of fruit should not be neglected at this season. A good soaking of liquid manure from the farmyard will greatly assist the buds for next season; failing this, a good top-dressing of manure placed round the trees, so that the rains may wash the nutriment down to the roots, will be very beneficial. Bone-meal is one of the best manures for fruit trees of all kinds as it is slow in action and therefore may be applied in the autumn and winter. It should be spread on the ground round the trees so far as the branches extend, and lightly forked in. Do not use a quick-acting manure, such as dried blood, at this season; rather defer the application of this manure until the late spring, when the trees are in active growth and the roots can assimilate it. Trees growing on poor or light soils will be benefited by a liberal dressing of fresh turf from an old pasture, first removing the old top soil down to the uppermost roots; work the new soil, well mixed with bone-meal and wood ash, amongst the roots, and cover with some of the old soil if necessary. Old trees that are past their best should be grubbed out. Plant new ones in good soil and they will soon give a return. Lime in some form or other is essential for most fruit trees, especially stone fruits; old mortar-rubble is very useful and should always be stored in a dry place.

Grease Banding.—Where the winter moth is troublesome trees should be grease-banded. The bands should be placed tightly round the smoothest portion of the tree stem, and the grease then well smeared upon them. This will perhaps require renewing several times during the winter, according to the weather. The best grease is the cheapest in the long run, and this will be safe to use.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Early Figs.—The early Fig house should by this time be cleared of all fruits, and it will not be desirable to employ any more fire heat than is thought necessary to ripen up the current year's growth, with plenty of fresh air admitted both night and day. If unnecessary growth has been kept well thinned out the trees will require very little pruning at this season of the year.

Where they are trained near the roof glass the trees are subject to attacks of red spider and other insect pests; therefore it will be necessary to untie and let the branches down, so that when the leaves have fallen it will be an easy matter to wash every portion of the tree; even the ties that have kept the branches in position make harbours for insect pests. In the meantime and until the leaves have fallen, the trees may be syringed vigorously with a nicotine wash in the forenoon of fine days.

Successional Fig Houses.—The house in which the second crop of fruit is still ripening should be kept slightly on the dry side, using only sufficient fire heat to dry up the superfluous moisture in the atmosphere. Air should be admitted both night and day, but the top ventilators should only be slightly opened at night. At this season of the year the best flavoured fruits are obtained in a well ventilated house. Trees in the later house, from which only one crop is taken, should receive every encouragement to ripen their growths; remove all unnecessary shoots and admit plenty of fresh air, night and day. If red spider is in evidence syringe the trees with an insecticide occasionally rather than syringe them regularly every day, as the latter method does not favour the ripening of the wood of the late trees.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Winter Spinach.—During dry weather this crop should be encouraged by stirring the soil between the rows with the Dutch hoe. Make sure the plants are not overcrowded in the lines, and thin them rather than allow them to remain thickly and become weakly. Overcrowded plants are soon injured by frost.

Asparagus.—Where the foliage has died down the stems should be cut and the beds cleared of all weeds. Place a covering of short litter over the beds, and if sea-weed is procurable use this, as it is much better than short litter. Trim up the beds neatly for the winter. Where young plants have been growing for the past two years, the roots may be lifted and stored in sand until all is ready for planting. The ground where the seedlings have been grown may be manured, dug, and left rough for the winter months.

Winter Salads.—Keep the soil well stirred between the plants of Lettuce and Endive, growing in frames, and dust soot or ground lime between them to keep slugs in check. Mustard and Cress should be sown in boxes at intervals of about ten days and germinated in heat.

Celery.—Where the Celery-fly has been attacking Celery plants a dusting of soot should be given all over the foliage when there is a slight dew. Continue the earthing up as it is required, doing the work on a dry day if possible and working the soil well round the plants.

Tomatos.—Late fruiting plants should have frequent applications of liquid manure at the roots; where fire heat can be applied a little warmth will be beneficial in ripening the fruits earlier. For spring fruiting plants seeds may be sown now, and when the seedlings are large enough to handle pot them off into three-inch pots and grow them in a moderate temperature, near to the root glass, to keep them as sturdy as possible.

Cucumbers.—Plants coming into bearing must be carefully attended to; maintain a night temperature of 65° so that quick growth may be encouraged: at the same time see that all unnecessary growths are removed and only a moderate quantity of fruits left to develop. Spray the foliage on fine days and water the roots carefully.

ORCHID NOTES AND GLEANINGS.

VANDA HOOKERIANA.

This beautiful Orchid, introduced from Borneo in 1882, has flowered at Tring Park during August of the present year and this is the second time the species has flowered there during forty-two years. V. Hookeriana flowered first in the late summer of 1882 and the form then had a much more intense purple labellum than now. The original plant died soon after flowering, and the one which recently bloomed was obtained from a small batch of others, about 1909, by the late Hon. N. C. Rothschild. One of the batch flowered at Ashton Wold, Oundle, in 1914, and was as deeply coloured as the original one, but although alive it has not yet flowered again. The treatment accorded to Vanda Hookeriana at Tring is the same as that usually given to Vanda teres and V. Vandarum, the other two terete-leaved species, but unlike V. teres, neither V. Vandarum nor V. Hookeriana should ever be cut down, but should be treated more like climbers. For these particulars and for the photograph and drawing from which our illustrations (Figs. 88 and 89) are reproduced, we are greatly indebted to Lord Rothschild, in whose collection—under the care of Mr. Dye—the specimen flowered. The flowers of V. Hookeriana are freely marked with purple on a white ground.

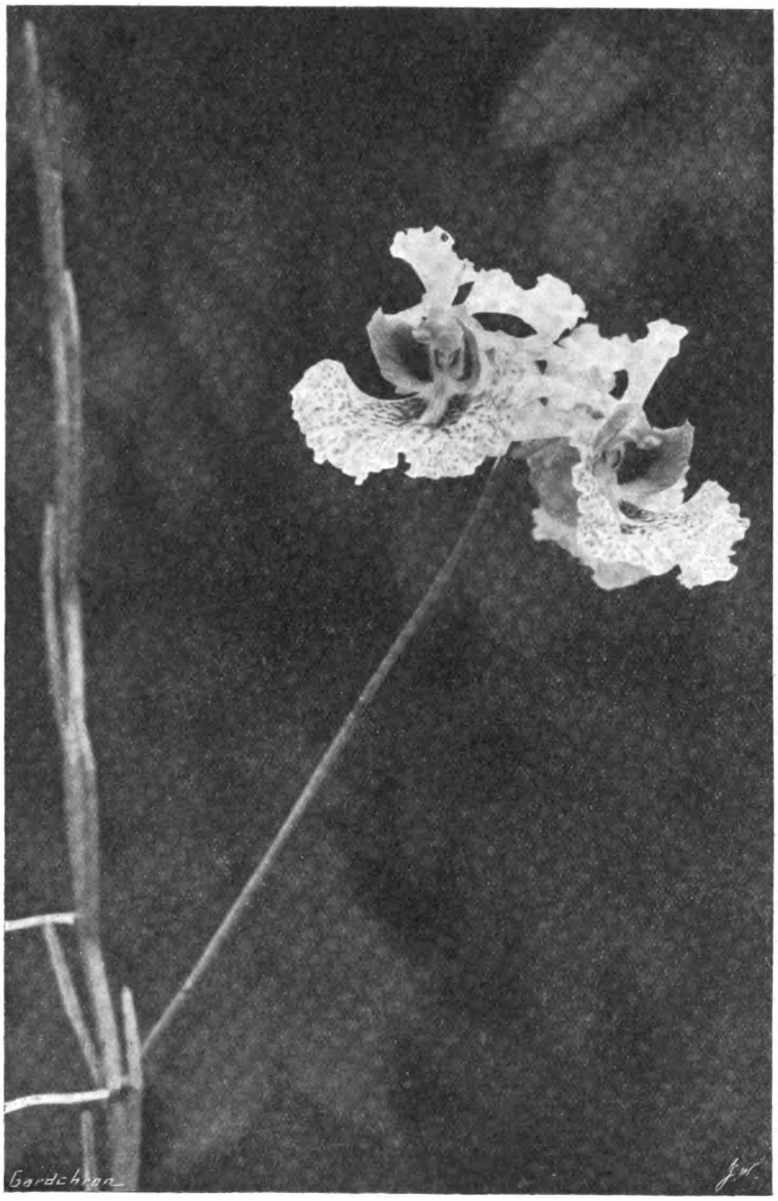


FIG. 89.—VANDA HOOKERIANA AS IT FLOWERED AT TRING PARK.

MILTONIA HYBRIDS.

It is only when a section of Orchid hybrids is considered as radiating from a common centre that the wonderful work of the hybridist in connecting a large number of beautiful and dissimilar species and intensifying the most beautiful features of each in colour, form and other desirable characters, that the magnitude of the work, with its endless combinations, is disclosed.

Miltonia vexillaria, the "scarlet Odontoglossum" of the reputed original discoverer, Bowman, and the Odontoglossum vexillarium of Reichenbach in *Gard. Chron.*, 1867, p. 901, laid the foundation of one of the most charming and showy sections of garden hybrids. For years its introduction was considered to be next to impossible and many attempts failed. But perseverance, which has overcome so many things deemed impossible, brought the grand Miltonia in a collection made by Chesterton in New Granada for Messrs. James Veitch and Sons, who flowered it at Chelsea in the spring of 1873. Later on, frequent importations were made successfully, and the species which had at first been considered difficult to grow for any length of time became quite at home in our gardens, and so great is the variation in the flowers that some fifty distinct forms, varying from pure white to rose, and shades approaching crimson and purple have been recognised by the awards of the Royal Horticultural Society. These have formed an ideal central stock with which some twenty-five direct crosses have been made, and which influence a large number of crosses already flowered and a still greater number yet to appear.

M. Roezlii, which also flowered first in 1873, has played a very important part. Crossed with M. vexillaria it gave M. Bleuana, announced in *Gard. Chron.*, February 16, 1889, p. 203, in connection with the plant shown at Brussels by Mons. Bleu, of Paris. The cross was made and flowered in England soon afterwards by several raisers, a like variation to that shown by M. vexillaria being observed. M. Bleuana became a first favourite with raisers, some forty direct crosses being made with it on other Miltonias, Odontiodas and Odontoglossums, resulting especially in the novel and showy Vuylstekearas, mainly developed by Messrs. Charlesworth and Co., and Odontonias, also specialities with that firm and Messrs. Sanders.

The development of Miltonia went on quickly and M. St. Andre (Bleuana × Roezlii) appeared with Messrs. Sanders in 1907 and M. The Baroness in the same year. The raising of M. Hyeana and M. Jules Hye de Crom brought helpful agents, especially in the section with large white flowers with a nearly black mask, extra fine examples in the same class being M. J. Gurney Fowler, M. Fairy Queen, M. Memoria Baron Schröder, and M. Lady Veitch of Messrs. Armstrong and Brown, all crosses with M. vexillaria Memoria G. D. Owen. These and others recorded are all descendants of the vexillaria-Roezlii class, but in 1917 Messrs. Charlesworth flowered a small batch of M. Venus (Phalaenopsis × vexillaria), introducing a new feature which is giving good results.

The Brazilian species crossed with the New Granada class had not been recorded until this year, when Messrs. Mansell and Hatcher flowered M. keighleyensis (vexillaria × spectabilis). M. Endresii, of the vexillaria class, native of Central America, now extremely rare, if not lost, is yet another desirable species and one not used successfully by the hybridist.

From the above-named base, already widely expanded, came other large sections including Miltonioda (Miltonia × Odontioda) of which Messrs. Charlesworth's Miltonioda Harwoodii (M. vexillaria × Cochlioda Noezliana) and its further extension by crossing with M. Charlesworthii, named Miltonioda Ellwoodiae, with rich carmine-crimson flowers, are two of the best; Odontonia (Miltonia × Odontoglossum) of which already about fifty distinct crosses are known; Charleswortheara (Miltonia, Cochlioda, Oncidium); and Vuylstekeara (Miltonia, Cochlioda, Odontoglossum) with over twenty combinations. All these complicated hybrids have been again crossed, carrying on the features of the "Banner" Orchid in varying degree in further developments.

M. Warscewiczii, with its upright, branched spikes of flowers, that have wavy-edged petals, forms a separate section. It has crossed freely with the several varieties used of the vexillaria class and produced a fine series of decorative hybrids. Miltonia Schröderiana a distinct species from Central America, produced Miltonioda Ajax when crossed with Cochlioda Noezliana, and Odontonia Longowoyi, when crossed with Odontoglossum Uro-Skinneri. *J. O'B.*

CYMBIDIUM MONA.

From Messrs. Cowan and Co., Southgate, comes an inflorescence of a remarkable Cymbidium which, while being specially attractive in itself, will lead to a new section of hybrids in this favourite class. It is the result of crossing C. Tracyanum and C. pendulum, and the habit of the plant and its arching inflorescence of fifteen flowers shows it to be intermediate between the two parents, with a nearer approach to C. pendulum in colour. The flower, which is three inches across, has the sepals closely marked with purplish-red lines on a lighter ground. The slightly narrower petals are similarly marked but with a narrow yellow margin. The three-lobed lip has the side lobes evenly marked with dark purple, the recurved front lobe being yellow in the middle and heavily blotched with ruby-purple. The column is dark claret-red with white tip.

The seed-bearing parent was C. Tracyanum, the markings of which can be distinctly seen in the flowers of the new hybrid, but the rich colour of the lip, its form and other features are distinctly those of C. pendulum. It is very interesting that two such widely-separated species should be merged by hybridisation.

QUALITY IN GLADIOLI.

The Gladiolus is enjoying rapidly growing popularity. That this popularity will not be denied, is not entirely an affair of the British horticulturist, for, as a matter of fact, although about a dozen years ago an effort was made in this direction, and a Gladiolus Society was started, no very substantial progress was made. The present wave of enthusiasm is more in the nature of reflected warmth from American and Continental fires than spontaneous combustion in our own home circle.

Years ago we had our Gladiolus enthusiasts both in England and Scotland, and the Gandavensis, Lemoineii, and Nancieanus hybrids were extremely well grown and well shown after the precisely careful manner of the orthodox florist. At the present time the modern Primulinus hybrids constitute a counter attraction to the old favourites, and without doubt these are to a considerable extent responsible for the influx of many recruits to the cult of the Gladiolus.

It has been stated time and again that the Primulinus family will supersede the large-flowered Gladiolus, and the purpose of this article is in part to urge that such assertions are distinctly imprudent, and totally unnecessary. It made be readily admitted that the charms of the Primulinus hybrids are of a character which strongly appeal to some who are not enamoured with the massive and formal outline of the giants of the Gandavensis tribe. Personally, the evolution of the Primulinus hybrids has given added joy to my life, but it would be robbing me of another equally cherished affection to sweep away the large-flowered race of Gladioli. There is room for both, and a place for each that each alone can fill.

There is one lesson Gladiolus raisers of the new generation need to learn, and this they may well learn from the older generation who bred and developed the large-flowered race; they must learn that it is necessary to adopt a standard, an ideal, towards which they may steadily and unwaveringly progress. The outstanding characteristic of the Primulinus type is elegant grace. The slender stem, the comparative smallness and lightness of the flower and the subtle and dainty shades of colour which at present predominate in the new race, at once placed the Primulinus hybrids in a class by themselves.

Already, however, there are signs that no actual standard or ideal has been kept in view, and without it the inevitable is happening—we are receiving from various sources varieties which are not calculated to help forward the cult of the Gladiolus, and if this is permitted to continue the wave of popularity will quickly subside and attention will be diverted to some other flower.

Some time before the war, I visited Messrs. Kelway's establishment and was much interested in the new developments they had in hand with the Primulinus or Lang-prim Gladioli. They were working for improvement of form and extension of the then somewhat limited range of colour, but I hasten to add within that limited range were some superb shades and fascinating combinations of flame tints, pink and yellow. I went again to Langport this summer, and was deeply impressed with the progress made. The firm have deep scarlets, salmon pinks, orange, white, and a galaxy of suffused and strikingly marked colourings, and there has been just about as much "improvement" in size and form as, I hope, will be considered necessary.

I have visited a good many other nurseries and have seen many novelties of delightful character, but I have also seen some, rather a large number, in fact, which have colour but far too much size, and which have, in fact, lost even the distinctive form of Gladiolus primulinus. To my mind, this is to be deplored, for an over-big Primulinus hybrid which has lost that graceful turn of petal which is so charming is nothing but an inferior, large-flowered Gladiolus. From notes made here and there, I have come to the conclusion that a large number of the big Primulinus Gladioli hail from America. We have had some very good varieties from that country, and it is in no bigoted spirit I make complaint. It may be the American raisers believed we are anxious to increase the size of the flower, and are endeavouring to produce what we shall be best pleased with. If that be so, it is a further strong argument in favour of the necessity for a standard.

The hooded top petal is a distinctive characteristic of G. primulinus and its hybrids, but in some varieties the droop of the petal is so pronounced that the interior of the flower is hidden from view. It would ruin the flower to give its top petal an upright turn, but it is certainly a vastly more pleasing flower when the edge of the petal is reflexed to a degree which exposes the markings of the throat to view.

Some few of the Dutch varieties are excessively drooping, and often only the back of the top petal can be properly seen. Other varieties, again, have quite small flowers set on stems so thick and coarse that all the elegance and grace of the spike is destroyed. One or two varieties have even received awards in which this fault is very marked.

These are further facts in substantiation of the charge that lack of a standard will lead to mischief. Great were the expectations regarding the market value of Gladioli of the Primulinus hybrid class, but at present these expectations have scarcely been fulfilled, although the reasons are not far to seek.

When first the flowers came upon the market they were strangers and unknown. Before the new line had a chance to secure a footing Covent Garden was flooded with consignments from Holland, but these were so mediocre as to create an unfavourable impression. Then English growers resorted to forcing under glass in order to catch the market before the glut of foreign importations, but a forced Gladiolus primulinus hybrid is not best qualified to prove the worth of the race. What is wanted to give these flowers a reasonable chance is to select half-a-dozen of the best varieties in good colours, grow them really well, and market them in fine condition. I know one man who has tried this, and he is well pleased with the results.

The future of Gladioli, whether for exhibition, for garden adornment, or for cutting depends much upon the present policy of raisers and specialists, and it will be a good step in the right direction if an interchange of ideas were forthcoming, and an effort made to establish a standard for each class or section of the family, which both breeders and judges may adopt. *A. J. Macself.*

THE ROSE GARDEN.

A METHOD OF PROPAGATING ROSES.

Perhaps I am claiming too much in describing the following method as new. Certainly during my gardening career I have neither seen it practised, nor heard of it, and in looking through the books that are available to me, I can find no mention of this interesting and, as I think, useful method of propagation.

I had been setting some Loganberry layers in the well-known way by making a hole, putting the pot of the current year's growth in, and firming the soil. As I passed some Rambling Roses, where new growth had not been tied up, it occurred to me that these might be propagated in the same way. Having the dibber in my hand I made holes, pushed the points of the growths in a few inches, and pressed the soil firmly back. This was done on July 23. On August 18 I was impatient to see the result and could not resist the temptation of uprooting some of the layers. I felt so confident of the result of the experiment that I was not at all surprised to find some which were well rooted.

It seems to me that the method described has several advantages. The necessity for the preparation of soil and cuttings is obviated. There is practically a certainty that every piece so layered will root. There is no notching or splitting to be done, and roots are formed much more quickly than would be the case with cuttings. There is simply the work of making a hole with a trowel or dibber in the adjoining soil, and pressing the soil back to keep the growth in place. *William F. Rowles, Gallows Hill, Sudbury, Suffolk.*

AUTUMN ROSES AT KEW.

The new Rose garden at Kew has been a source of pleasure and education to those who have visited these gardens this year, and the present time affords an opportunity of studying the merits of the many varieties in so far as their power to produce an autumnal crop of flowers is concerned. The collection at Kew is comparatively up-to-date, containing as it does many of the newer introductions, while a number of older favourites are still retained and bid fair to excel not a few of the varieties of more recent date. For instance General McArthur and Madame Abel Chatenay rank high among the perpetual-flowering varieties, and the first-named is undoubtedly still one of the best red Roses and may always be depended upon to give freely of its highly fragrant flowers throughout October and November. Madame Abel Chatenay has a very close rival in Mrs. Henry Morse—a magnificent pink Rose—a large bed of which has been most attractive at Kew throughout the summer. In this, the first week of October, Madame Abel Chatenay holds sway in point of effect, but in another week's time Mrs. Henry Morse will once again be in fine form, for the bushes are smothered in buds, and the colour of the opened flowers is richer than that of Madame Abel Chatenay. Other pink varieties are Lady Ashtown, which is very free but has one great defect in that it is subject to mildew; other outstanding varieties of pink colour are Coralina and Prince Charming. The new variety Mary Munro is well furnished with pink buds and is evidently a very good grower, while Dorothy Page Roberts appears to be most commendable for bedding; the blooms are large, well-formed, and defy the bad weather; the colour is deep pink, tinged with copper.

Of much more intense shade is Donald McDonald, the cerise-pink tone of which is particularly bright, while Mrs. Wakefield Christy-Millar produces large flowers of deep rose-pink which are of excellent shape in the bud. In growth it is very erect and lacks the gracefulness of many of the H.T. varieties. Among the apricot and coppery-pink shades are Los Angeles, Henrietta and Lady Pirrie, all of which are particularly effective just now.

Madame Butterfly is one of the best of the pale, flesh-coloured Roses; indeed it is now far prettier than it was in the summer, and the cool, sunless, wet weather seems to suit it. The autumn blooms are larger and of better shape than those of the first batch and the colour is a shade or two deeper. The growth is as strong as that of its parent Ophelia, which variety is also making a very creditable display of bloom.

The trio of yellow varieties is always interesting. I recall that Rayon d'Or could never be grown successfully at Kew and to-day we have Christine, Golden Emblem and Mrs. Wemyss Quin, and a bed of the first-named variety is a picture at the present time. The flowers are rather small, but they are so freely produced and so rich in colour that for garden decoration this can hardly be considered a defect. Moreover, I well remember that during the hot, sunny weather in the early part of July, that Christine withstood the bleaching effects of the sun, whereas the high tone of colour in Golden Emblem was soon reduced to a creamy-yellow.

Red Letter Day and K. of K., two semi-double scarlet flowers, are equally good, and of white and creamy-white varieties are Kaiserin A. Victoria, Madame Jules Bouche, Molly S. Crawford and Miss Willmott, which are all meritorious. The variety Miss Willmott is often seen exhibited as a show flower and indeed many perfect exhibition blooms could be cut from the bushes at Kew.

The best of the deep apricot section are Lady Hillingdon, Margaret Dickson Hamill and Lady Elphinstone, while among the single and semi-double varieties of this section Mrs. Oakley Fisher and Emma Wright are making a brave show. *R.*

ROSES FOR ARCHES.

I have no criticism to offer in so far as the remarks upon cultivation and treatment are concerned in the article entitled "Roses for Arches" (p. 232), by Mr. C. Turner, of Ampthill, but his selection of a dozen varieties appears to me to suggest that complete stagnation exists in the evolution of Rambler Roses. The dozen which he mentions consists, no doubt, of well-tried sorts that have, in their day, given immense satisfaction to growers for many years, but with the possible exceptions of Blush Rambler and Lady Godiva the list could be vastly improved upon. Dorothy Perkins is the first example. Writer after writer insists upon quoting this Rose as the finest pink of its type, and the average amateur rosarian is inclined to believe that it is still unrivalled. Mr. Turner, too, includes White Dorothy in his list; but, as a matter of fact, this variety has been totally superseded by another sort which is infinitely superior. I will take Dorothy Perkins first. Who, for instance, would continue to grow this Rambler when we have such a variety as Petit Louis? Unfortunately, however, few growers and few nurserymen seem to have any knowledge of it or its merits. It was sent out by M. Nonin, of Chatillon, in 1912, and my advice to those who are smitten by the charms of the ubiquitous Dorothy is to try Petit Louis. It flowers fourteen days earlier than Dorothy Perkins.

For a white Rambler, to-day, one would surely select Sanders' White Rambler. This is, without question, the finest of its type. We hear much, too, of the lack of fragrance in modern Roses. One of the most charming features of Sanders' White Rambler, in addition to the unrivalled purity of its flowers, is its glorious fragrance. In this respect it rivals any of the strongly scented old favourite Roses.

In crimsons, Excelsa is good, but does not Romeo beat it? Lady Gay has had its day. No one who knows Minnehaha would ever trouble about Lady Gay. Hiawatha is not always satisfactory, and growers who are not satisfied with it might do well to try Caprice Rouge. There are many other good Rambler Roses that are more suitable for arches, but the purpose of this note is to draw attention to the merits of Petit Louis, Sanders' White Rambler, Minnehaha, Caprice Rouge, and Romeo. *George M. Taylor, Edinburgh.*

ŒNOTHERA.

Several of the Evening Primroses are valuable plants for the rock-garden and some few of the species may even aspire to a very prominent position in this fascinating phase of gardening.

Œnothera macrocarpa, of somewhat trailing habit, attains a height of from six to eight inches; the leaves, greyish-green in colour, are supported by somewhat succulent stems, which are quite attractive by reason of their reddish colouring. The glory of the plant, however, is the huge golden-yellow flowers produced from the axils of the leaves; these last a single day but an unbroken succession is maintained from June to autumn. The species was introduced from North America in 1811.

Œ. taraxacifolia appears to me as one of the finest members of the genus. It has a trailing and almost sprawling habit of growth and the leaves attached to thick, succulent stems, bear a striking resemblance to those of the Dandelion, hence the specific name. The very large, creamy-white flowers open at dusk and last but the single night; during dull weather they will sometimes expand during the day-time. A delicious fragrance is emitted by these glorious blossoms and will scent a garden during the summer nights; the flowers fade to a not unpleasing shade of pink, an added attraction to this very fine Peruvian species. An abundance of flowers is produced from midsummer to autumn.

Both these fine species are easily raised from seeds sown early in the year, the resulting plants flowering the same season; a sunny position in a well-drained and sandy loam will suit them to perfection.

Œ. pumila and Œ. riparia are very similar and the babies of the genus; they differ principally in the size of the leaves and the flowers, the latter being a deep golden yellow. In both species they are very dwarf, trailing plants, with thin, wiry stems and very small leaves, eminently suitable for sunny positions in the lower reaches of the rock or alpine garden. Propagation is best effected by means of cuttings inserted during autumn; they are North American plants introduced towards the close of the eighteenth century.

Œ. speciosa, white, and Œ. s. rosea, its pink form, are plants about a foot in height, quickly spreading by means of underground stems; the pink variety is particularly attractive and remarkably free-flowering. The three last-mentioned species open their flowers in strong sunlight and the blooms are very persistent. All are propagated by cuttings and division.

For a large rock-garden, Œ. Fraseri, one-and-a-half feet, is a very beautiful plant, the yellow flowers being produced in the greatest profusion, while as a hardy border flower it is ideal; it also comes from North America and was introduced in 1811.

Although quite unsuitable for the rock-garden, some reference is desirable to that remarkably fine and yet somewhat despised species, Œ. Lamarckiana, long known in British gardens. It has much to recommend it for extensive planting wherever good plants are cherished, attaining a height of four, five, and even six feet. The large, clear, lemon-yellow flowers are produced in the wildest profusion from spring to autumn. A colony of self-sown plants will give the best results and cannot fail to please. *Ralph E. Arnold, Cirencester.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard, 1543.*

NOTES FROM WISLEY.

THERE has been from time to time much difference of opinion as to the merits of clipping into shapes such shrubs as the common Yew. While it cannot be denied that cut Yews of the right shape when placed in the right position are an ornament to a certain type of garden, it must not be forgotten that the practice of topiary robs this plant of the attractive feature which is indicated by its specific name.

A well-berried specimen of Taxus baccata var. fastigiata (commonly known as the Irish Yew) is to be seen on the Wisley rock garden. The so-called berries consist of a hard seed surrounded by fleshy scales which are said to be edible although all other parts of the plant are extremely poisonous.

The Wisley rock garden contains other Conifers, and many of these have attained a size which would necessitate their removal if situated in a garden of smaller dimensions. Several species which under normal conditions would be too large for the rock garden have been kept within bounds by restrictions imposed upon their rooting system. As an example of this, there is an old plant of Juniperus chinensis argentea variegata growing by the side of a rock pool, which is still only two feet high, while a plant of the same age in ordinary soil has now reached the height of nine feet.

Of the dwarf Conifers, which are suitable for the rock garden and which are to be seen at Wisley, Juniperus communis compressa, Retinospora obtusa nana and Thuyopsis dolabrata nana may be mentioned. Among the Pines, Pinus aristata and P. pumila may be kept dwarf for some years. An old plant of P. pumila at Wisley is now about six feet high. Not far away are some plants of Juniperus pachyphlaea elegans which are now very attractive with their silvery-grey foliage.

Autumnal colouring in the rock garden is provided, among other shrubs, by Berberis Thunbergii and Stephanandra flexuosa, while every shade of yellow and red may be seen in the Azaleas in the wild garden.

In addition to masses of Meadow Saffrons, which are flowering along the lower walk to the wild garden, large patches of autumn Crocuses are in bloom including C. speciosus, C. nudiflorus, and the charming little C. pulchellus with flowers of a pale lavender shade. *J. G. White.*

PLATANUS DIGITATA, GORDON, AND P. CANTABRIGENSIS, HENRY.

I AM able to draw attention to these rare and choice Planes, solely by reason of the researches of Professor A. Henry, of the College of Science, Dublin, who discovered them in the collection of the Botanic Garden at Cambridge, where there is one tree of each. In association with Miss Margaret G. Flood, Professor A. Henry has published his researches in a paper of the *Proceedings of the Royal Irish Academy*, Vol. XXXV., 1919, entitled "The History of the London Plane." A synopsis of the six living species is given, and the paper is quite indispensable to any who wish to understand the genus or work at its nomenclature. Both the Planes under notice are regarded as second-generation hybrids from P. acerifolia, the London Plane, which is the first generation hybrid from the original species P. occidentalis and P. orientalis.

The investigations which form the chief subject of the above paper, in Prof. Henry's opinion, prove beyond doubt the hybrid origin of the London Plane. Arrived at this conclusion it is easy, I think, to understand the nature of the other cultivated Planes. It is clear, for instance, why, with considerable leaf difference, there should be comparatively little difference in the fruit balls, for in the case of wild species or variations there is usually, I think, a more regular difference running through all parts of the plant. The Planes here in question and, indeed, all the hybrids, appear to be hardier and of more robust constitution than either of the original parents. The vigorous character of the London Plane is due, as in other cases, as shown by Prof. Henry, to hybridity, and so far as any other explanation is known the improved character of the constitution, continuing also to the second generation hybrids, must be due to the same cause.

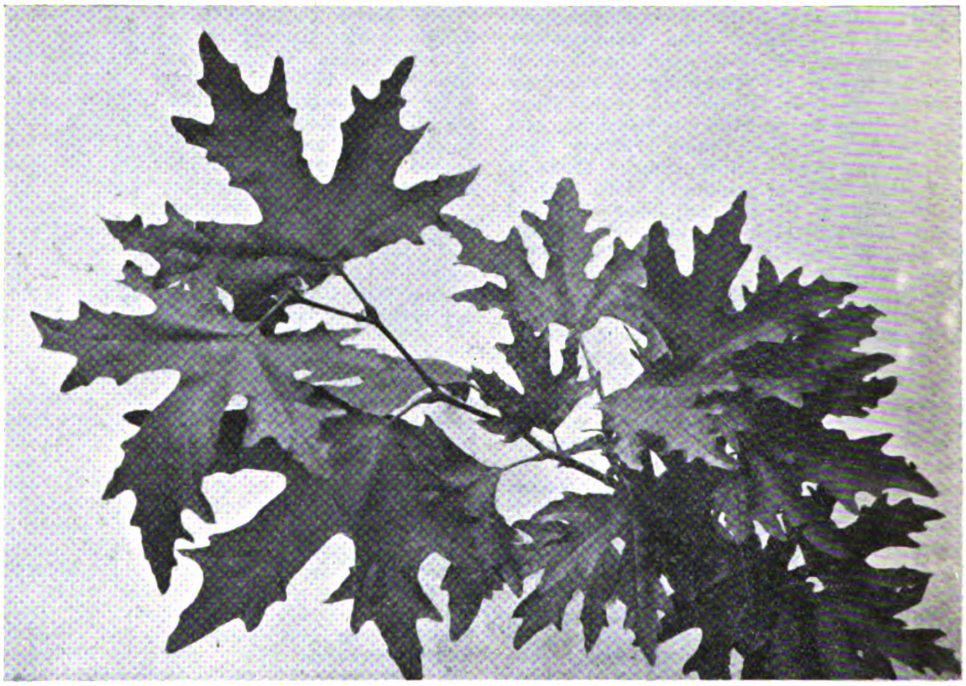


FIG. 90.—PLATANUS DIGITATA, GORDON; LEAFY BRANCH.

P. digitata and P. cantabrigensis agree in not developing an embryo, and in this they are in contrast with all other Planes. For the photographs which provide the accompanying illustrations (Figs. 90, 91, 92 and 93), I am indebted to Mr. F. G. Preston, the Superintendent of the Botanic Garden at Cambridge.

PLATANUS DIGITATA, Gordon. *The Garden* 1872, Henry; *Proceedings of the Royal Irish Academy*, Vol. XXXV., Section B., No. 2, p. 21, plate VIII.; and the illustrations on this and the following pages.

Of this only two trees are known, the one in the Cambridge Botanic Garden and another at Bicton, though in The Mall, London, there are a few Planes that may be identical with it. It is a tree of great merit. It has decidedly ornamental foliage which is similar to that of P. orientalis but smaller. The leaves do not exceed five inches in breadth and have wider and deeper sinuses between the three lobes than P. orientalis. The tree is apparently of much less vigorous growth than P. acerifolia, described as of slow growth and stunted in habit, which must be of advantage in some cases. Tomentum persists on the petiole and at the origin of the main nerves. It is much hardier than P. occidentalis or P. orientalis, as reported from the continent. In all probability it is a seedling from P. acerifolia, but there is no direct evidence of this. So far as I have material it appears to be distinct from other Planes in the deep furrows of the conical petiole base, and in the persistence of the tomentum on the petiole. The teeth on ultimate lobes of the leaf—in the case of leaves before me and in the accompanying leaf illustration (Fig. 90)—suggest to me almost the points of an antler and in this they are, I think, quite characteristic.

The fruit balls (Fig. 91) are two or three on the peduncle, bristly, very small, or about half-an-inch in diameter, composed of a few imperfect achenes without embryos. The achenes have a tomentose body and a nearly glabrous, short, conical head, ending in a persistent style.

PLATANUS CANTABRIGENSIS, A. Henry. *Proceedings of the Royal Irish Academy*, Vol. XXXV, Section B, No. 2, p. 21; and illustrations on the following pages.

Prof. Henry writing me awhile ago considers it would be better to call this P. acerifolia var. cantabrigensis, Henry in litt., but for convenience in common use the original designation as quoted above may, no doubt, be retained. I have regarded this tree as of some value because of its compact habit and lesser vigour as compared with the London Plane, which sometimes requires a considerable amount of pruning to keep it within bounds.

The leaves (Fig. 93) resemble those of P. occidentalis except that their bases are truncate with a cuneate central part, and the base of the leaf itself may be cuneate while in either case the principal veins, usually five, radiate from very near the junction with the petiole. In this fan-shaped arrangement it is very distinct and even striking. The leaves are small and do not exceed five inches in width; they have five short, triangular lobes, entire or with one or two teeth.

The fruit balls (Fig. 92) are small, three on the peduncles, about three-quarters-of-an-inch in diameter and are composed of relatively few achenes in which embryos are not present.

The achene is dome-shaped, as figured by Prof. Henry, rather shorter than of any other kind and flatter than in P. orientalis which it otherwise resembles. The leaves are glabrous except for a tuft of hairs at the origin of the nerves. *R. Irwin Lynch, V.M.H.*

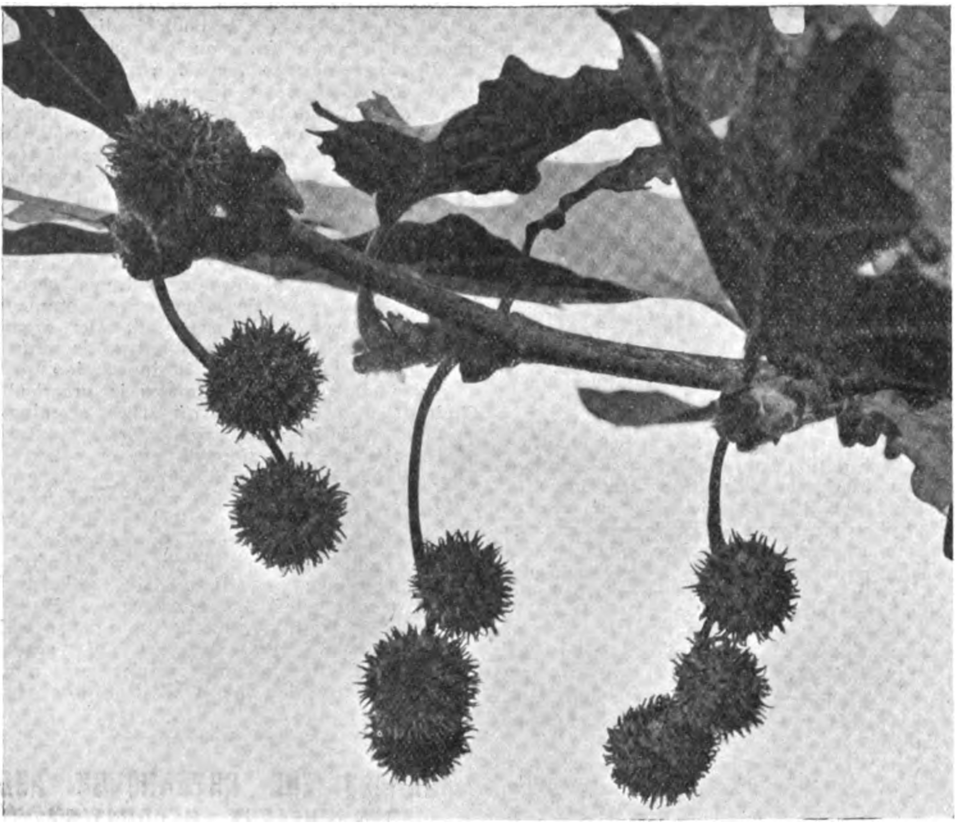


FIG. 91.—PLATANUS DIGITATA, GORDON; FRUITING BRANCH.

HORTICULTURAL EDUCATION IN HERTFORDSHIRE.

The facilities for technical education have developed and increased tremendously during the last generation, and opportunities are now provided for instruction in almost any branch of industry by means of evening classes or organised day courses. The position of horticultural education, so far as the training of private gardeners and teachers is concerned, has long been a good one, with the excellent instruction given at such places as Kew, Wisley, and the horticultural departments of our Agricultural Colleges. The position of smallholders, market gardeners, and employees in commercial establishments has, however, been somewhat different. The majority of these cannot afford to leave their work for any considerable length of time, and, therefore, the courses of instruction hitherto available have been of little use. Surely these men and women require such assistance as much or more than anyone. At the present time it is imperative that cultivators should have an intimate knowledge of the why and the wherefore of their work.

It is a sign of the times that the Hertfordshire Agricultural Committee has appointed a Horticultural Instructor at the Agricultural Institute at St. Albans. The development of the gardens and fruit plantations at Oaklands makes a connecting link in horticultural education so far as Hertfordshire is concerned, and enables those intending to take up a branch of horticulture as a career to make a better start.

The Institute is situated on its own farm of over three hundred acres. Of these, about eleven acres are devoted to horticulture. The gardens are well laid out and comprise about one-and-three-quarter acres of land with an enclosing wall for fruit trees. There are several glasshouses, including Peach-houses, and vineries. Water is laid on throughout the garden. Closely adjoining is an orchard extending to about two acres. To this area has now been added three-and-a-half acres as a commercial fruit plantation and market garden, and three-and-a-half acres for the cultivation of Black Currants. The Department is run mainly on commercial lines, and provides scope for practical instruction in market gardening, fruit culture, Tomato and Cucumber growing, floriculture and domestic gardening. An apiary is attached to the gardens.

The scheme of instruction arranged by the Institute consists of three short courses, each of one month, which together comprise the full course, and are so arranged as to cover each season's work, and at the same time make it unnecessary for those attending the courses to give up their regular work. Employers usually realise the ultimate benefit to themselves obtained by allowing their employees to attend a course of this description. It is hoped that these courses will form an introduction to horticulture, and that students completing the year's work will be able to continue their studies and find technical books understandable and helpful.

The syllabus is comprehensive and the combined theoretical and practical training offers an almost unique educational opportunity. Four scholarships are offered by the Hertfordshire County Council for this course, open to residents in Hertfordshire. *C. E. Hudson, N.D.H.*

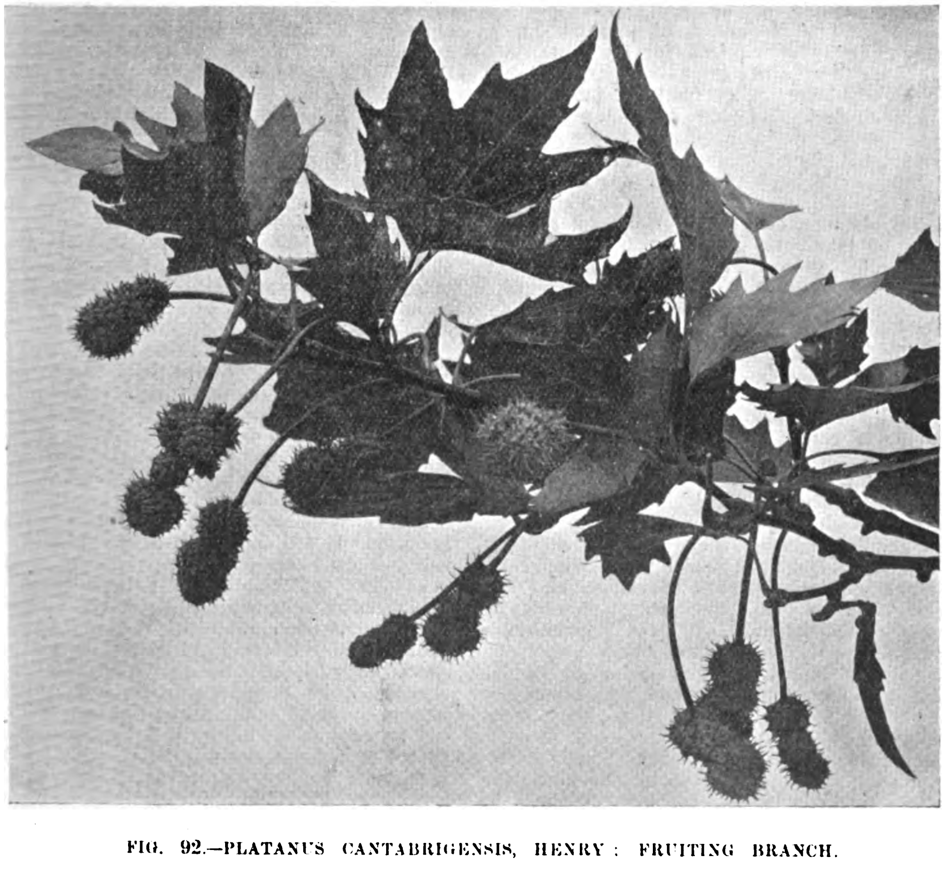


FIG. 92.—PLATANUS CANTABRIGENSIS, HENRY; FRUITING BRANCH.

NOTICES OF BOOKS.

Rhododendrons for Amateurs.

The genus Rhododendron has grown so enormously during the past twenty-five years that it is almost impossible for garden lovers, other than Rhododendron specialists, to acquire even a working knowledge of the most useful species and much less a critical understanding of the genus. Therefore the work under review* comes at a most opportune time, for its sorts the wheat from the chaff and places before us in a clear, concise, and interesting manner not only descriptions of the more important species and varieties, but also a good deal of historical, topographical and cultural information. Following the introduction is a map illustrating the headquarters of the genus in Tibet, Assam, Upper Burma, Szechuan, and Yunnan. Then come chapters on the distribution and habit of Rhododendron species; the situation suitable for Rhododendrons; the cultivation of species and hybrids from seed onwards; descriptions of the most reliable species for general cultivation grouped in their several sections; and a chapter on Rhododendron hybrids, followed by the names of collectors and nurserymen specialists.

How thoroughly the author has dealt with his subject in the space at his disposal may be gleaned from the following sub-headings which appear in the chapters devoted to situation and cultivation. Thus: soil, sun and shade, wind, sowing seeds, pricking-off seedlings, general propagation, the nursery, planting, and diseases, all receive plain practical attention. An idea of the specific descriptions may be gathered from the accompanying extract:—

"*R. Keysii* (Nuttall). Introduced from Bhutan in 1851. A shrub of twelve feet or more. The leaves are oval, tapering at both ends, green above and glaucous beneath. The corolla is tubular and brick red in colour. The flowers are borne five or six in a flat cluster. The period of flowering varies in this species from April to June. It grows best either in the west or in a cold garden where the growth is retarded to a reasonable time of the year, when danger from frost is more or less past. Unlike its relative *R. cinnabarinum*, it must have a certain amount of shade, and grows best in situations suitable for *R. Falconeri*. It is a peculiar looking plant, and the flowers are unlike those of other Rhododendrons, but the colour is brilliant."

The book is the work of Mr. E. H. M. Cox, editor of *The Garden*, and the author has very cleverly combined scientific with practical information. Although the author claims that it is a book for the amateur, it is also a book that should find a place on the shelves of the botanist and professional horticulturist, whilst the modest price of 5s. places it within the means of most people who are interested in Rhododendrons. The book is well produced and contains a number of good illustrations.

First Book of Grasses.†

The book is purely a technical one, and would interest none but those having in view a study of the grasses. The method of instruction followed was used by the author in teaching special students. Bearing in mind that the book is intended as a primer, she gives her instructions as simply as possible, but insists upon the student learning the technical terms as applied to grasses in order to avoid lengthy or roundabout descriptions. The ninety-four illustrations serve to show the parts of a grass under discussion. The grasses of the United States are used for the twelve lessons into which the body of the book is divided, and progress is made from such a simple grass as Poa pratensis to Zea Mays, which is the most complicated. A diagram of a flowering branch, and another of a grass spikelet show how the one may be compared with the other. One British flora speaks of two glumes, two pales, two lodicules (perianth of a grass), stamens, ovary and styles. Another states empty glumes, flowering glume, palea, lodicules, stamens, ovary and styles. In this book the same organs in the same order, are indicated by first glume, second glume, lemma, palea, lodicules, stamens, ovary and styles. These are all the organs in a spikelet of grass, but nature is profuse in variety and niggardly in innovation.

The further study of grasses is practically limited to the study of the seemingly endless variations in size, form, texture, elaboration or reduction of one or other of the above parts of a spikelet. A grass may be recognised by its stems and leaves, but a study of the spikelets and their arrangement is necessary to ascertain the genus, and for the purpose of classifying them in groups or tribes. The spikelet is indeed the unit of the inflorescence. By the use of this book a student may get a wide knowledge of the structure of grasses generally, for genera and species are much more numerous in the United States than in Britain.

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

IPOMOEAS.

There are several annual species of Ipomoea suitable for the stove and greenhouse, including I. Bona-nox, the Good-Night Plant, so called because the flowers commence to open during the evening. This species is best grown in the stove or intermediate house, and is seen to advantage when it can be planted out in a shallow border and trained up a rafter. Its huge white flowers are very attractive. Seeds should be sown in a warm house during February or March. This plant grows freely in any good potting compost, and if it cannot be planted out a large pot will be required for its roots.

Ipomea Quamoclit is a slender, twining species, with very fine, feathery foliage. It bears a profusion of dark red flowers. Seeds should be sown in a warm house during March, and four or five seedlings pricked off into a 48-sized pot, afterwards potting them on into seven-inch pots. The thin, twining stems should be given several slender sprays of Hazel to climb over. This species is generally grown in a warm house, but during the summer it will succeed quite well in an ordinary greenhouse.

Ipomea rubro-caerulea, with its large, beautiful blue flowers, should be much more generally grown for greenhouse decoration. The variety known as vera, or grandiflora praecox, should be preferred as it comes into flower earlier and is not such a rampant grower as the type. Seeds may be sown during March or April, in a warm house, pricking of the seedlings singly into small pots and afterwards potting them on as they require it until they are in seven-inch or eight-inch pots, in which they should be flowered. As the season advances and the plants increase in size they should be gradually accustomed to cool greenhouse conditions. If so desired they may be planted out in a shallow, well-drained border inside the house and trained up pillars or rafters, remembering always that they must have a light, sunny position.

The dwarfer, early-flowering variety may be grown in bush form by keeping the shoots pinched to form bushy plants, in which form they are very suitable for the stages. *J. Coutts.*

PLANTS IN BLOOM ON NEW ZEALAND'S SHORTEST DAY.

A short note on plants found in flower here on this our shortest day, June 22, may prove of interest to your readers, who, I hope, will not be envious of our conditions. My garden is in a small town on the coastal plateau, three hundred feet above sea level, about twenty-five miles south-east of Mt. Egmont, which is a half-sized Fujiyama. We are about two miles from the sea. The soil is light, volcanic, with a hungry subsoil, very porous indeed, and very fertile if its humus content is safeguarded. The climate is one of the rain-forest type, about sixty inches of rain falling in a year, but with very heavy winds, of which the south-west and south-east are very trying to vegetation, especially the latter, which sometimes comes as heavy gales, with salt spray, blackening almost everything for miles inland. Late summer and autumn are usually fairly dry but never very hot; the winters are mild with, usually, few frosts; fourteen frosts in succession two winters back was a record not touched for about thirty years.

During the past week I have counted some fifty-four varieties of plants in flower; some are in full bloom at their normal period; some show the last blooms of an belated season and others are the forerunners of spring.

In the first class are the following:—Narcissus Tazetta, six or seven varieties, N. Paper White is covered with seed capsules; Iris Kochii, I. stylosa in several varieties, I. tingitana; a blue-flowered Australian Kennedya (Hardenbergia), Daphne indica, Luculia gratissima, Erica arborea, Camellias in several varieties, Abutilon (yellow), Armeria majellensis, Campanula rotundifolia, and Ageratum (blackened by frost). There is an Oxalis, a tall, yellow, and a free-flowering white sort which I think may be O. enneaphylla. There are also two native Veronicas, one being V. Cataractae.

Plants with late-season blooms include:—Roses, Chrysanthemums, Brugsmansia (white), hardy Cyclamens, Hydrangea hortensis, Antirrhinums, Wallflowers and Stocks, Cheiranthus alpinus, Marigolds, Dolichos, Zonal Pelargoniums, Geraniums, Lasiandra, Bignonia, Paris Daisies, Leonotis Leonurus, Swainsonia galegifolia alba, Gerbera, Tropaeolum majus, Fuchsias, Solanum jasminoides and Vittadinia triloba.

The third group of plants, just commencing to bloom, includes:—Double Daisies, Primula malacoides, Erica Cavendishii, Richardia aethiopica, Violets, Polyanthuses, Dianthus Allwoodii, D. caesius and D. atrorubens; Cydonia Maulei and C. japonica; Leucojum vernum, Azalea indica, a Rhododendron, Anemones and Iris pumila.

In addition, Iris, Sisyrinchium and Gladiolus tristis concolor are in flower, but as they are in process of acclimatization I expect they will not flower at this season in other years.

Lastly, in the greenhouse, which is really only a shelter for seed pans, there are a few Streptocarpus, Primula floribunda and a Cypripedium.

Lest anyone should think we are too highly favoured I will mention a few plants that will not do here:—Snowdrops die out entirely in a year or two, though I hope some day to try bulbs from the vicinity of Mt. Vesuvius; so does Anemone Hepatica and Aquilegia glandulosa; Crocuses grow but flower only sparodically, and disappear gradually; Hellebores are not quite easy to manage, and Auriculas require unusual care. Many Chinese Primulas can be kept fairly happy but European alpine Primulas I have entirely failed with. Lilium speciosum is very poor, as is also Lilium giganteum. Fritillaria Meleagris is feeble and F. imperialis has entirely died out. *W. M. Thomson, Hawera, Taranaki, N.Z.*

---

* *Rhododendrons for Amateurs*, by E. H. M. Cox. Published by Country Life, 20, Tavistock Street, Covent Garden, W.C. 2. Price 5s.

† *First Book of Grasses. The Structure of Grasses Explained for Beginners.* By Agnes Chase, Assistant Agrostologist, United States Department of Agriculture. New York: The Macmillan Company. Price 6s. net.

RHODODENDRONS.

(*Continued from p.* 236).

Other methods of propagation are by cuttings, grafting, and layering. Rhododendrons as a class do not strike well from cuttings, and the method should be used only for the smaller species. It is employed, however, in the case of R. javanicum and might be successfully applied to all the soft Indo-Malayan species. With these, however, we have no concern. The Azaleas, too, are often raised from cuttings.

Grafting is much used by the trade for raising plants in large numbers on stocks of R. ponticum as well as on certain hybrid stocks. Many of the Azaleas grown for the market are grafted; but the profane need not trouble themselves about such trade subtleties. There is much uncertainty about grafts and very little gained. Layering is a slower but a surer method, and is easily employed by the ordinary person to whom grafting is a mystery. Plants layer themselves naturally. Man improves on the lead given. The lower branches of the bush or shrub it is desired to propagate are half cut through and fractured, preferably no more than a few inches behind the bud; layering should not be undertaken while the sap is actually moving, for it depends on an ascent of sap to the "heel" (or layer shoot) and a stoppage of the downward current at the fracture, whereby roots are formed and thrown out. Early spring or midsummer is the time for layering. Then the shoots are pegged down and earth piled over the wound. In about two years the branch is rooted and may be cut off the parent. It is then an independent plant, a chip of the old block. This method of propagation is certain and easy. Three or four branches of one specimen may be layered simultaneously. It may be usefully applied to all trees, bushes and shrubs—not, of course, to the dwarf species, which are best raised from cuttings. I am not sure, however, that some of the broom-forming moorland "Lapponicums" do not layer themselves naturally, though the "layers" (if they can be so called) may not sever their connection with the parent for some time. Layering is the obvious method for the amateur to increase his stock.

In another respect Rhododendrons do not need much looking after—they require no systematic pruning. Their habit and mode of growth enable them to form full, rounded bushes. They always branch close to the ground (which makes layering a simple matter). Even in the biggest tree species the bole usually splits into two or three trunks at no great height above the ground. In fact, given reasonable treatment, Rhododendrons may be left to look after themselves; which, after all, is a concession.

With regard to size, Rhododendrons must not be expected to reach the dimensions in this country which they attain in their own; the conditions are not sufficiently suitable, therefore full efficiency is not to be expected. This applies especially to the large-leaved trees of the 'Grande' and 'Falconeri' type; which will necessarily be smaller in proportion than other species, because the contrast in conditions is for them greatest.

Similarly, the age at which a plant flowers in this country is no index to the minimum age. If conditions are not suitable it may not flower at all. It is a well-known fact that in captivity wild animals commonly fail to breed; and it may be the same with plants. They do not die; they hang on year after year eking out a miserable mysogamous existence. Then, when conditions improve, they bloom reluctantly.

Flowering is a very exhausting pastime for a Rhododendron, however, especially when followed by a heavy crop of seed. It seems unlikely that in the wild state the same plants flower annually. It is no uncommon thing to come across individual trees without bloom, though otherwise healthy; and this I assign to their having exhausted themselves in the previous year, or perhaps over a series of years. They are taking a nap. In order to avoid this in the garden, the flower heads should always be pulled off when the flowers are over and not permitted to ripen seed.

To return once more to the question of soil; it must be remembered that owing to their shallow root systems, Rhododendrons grown in the open sometimes get their roots exposed. This is bad. It should not be allowed to happen. The plants should be liberally top dressed every year with decayed leaf-mould (some authorities recommend stable manure) or mulched, or the plants will be killed or at any rate seriously inconvenienced. It is not enough to keep Rhododendrons alive; their charms are too nebulous when out of bloom. What is required is to keep them fat and happy that they may break into smiles of blossom each year. *F. Kingdon Ward.*

(*To be continued*).

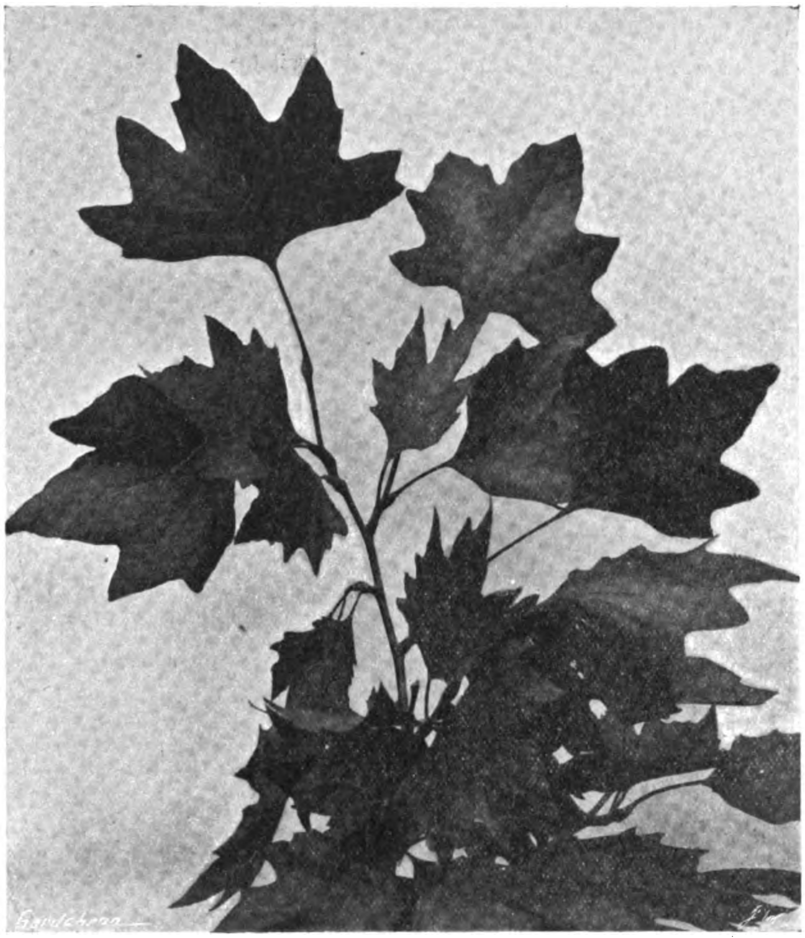


FIG. 93.—PLATANUS CANTABRIGENSIS, HENRY; LEAFY BRANCH.

(see pp. 250 and 251).

TREES AND SHRUBS.

HELIANTHEMUM LUNULATUM.

This is one of the most delightful of the smaller Sun Roses, and I am encouraged to refer to it at this season because it is now—mid-September—covered with the blooms of its second flowering, which latter, quite apart from the little shrub's many other charming attributes, is a feature of no little importance. A native of the Mediterranean H. lunulatum is probably not quite hardy everywhere, but it will withstand a great deal of frost in a dry, well-drained soil, and even though it may lose every leaf it will break out again in spring with extraordinary vitality. Generally speaking, Helianthemum lunulatum makes a somewhat dense, spreading bush about nine inches tall, which delights to flop over the face of a rock or low retaining wall. The leaves are very small and numerous, oval-pointed and silvered with silky hairs. Above these the flowers appear singly on stalks about an inch long. For the size of the plant they are large, about half-an-inch across, and clear yellow, each petal having at its base a crescent-shaped blotch of orange, this distinguishing it from all others of its genus. These blossoms are borne in great profusion throughout spring and early summer, and again, as I have said, in autumn. Cuttings are easily rooted in a cold frame at this season and, although growth is slow, the little plants begin to flower at a very early age. *N. Wales.*

EUCRYPHIA PINNATIFOLIA.

This is one of the most conspicuous, hardy, autumn-flowering shrubs, and one which never fails to attract attention when the short-jointed, pinnate-foliaged shoots are wreathed with large, white, four-petalled, cruciate flowers. Although quite hardy and long introduced, it remains an uncommon shrub.

Eucryphia pinnatifolia requires a soil free from lime, and being surface rooting, prefers a position not too dry in summer; an annual top-dressing is of great assistance in the production of strong, free growth. Out of flower it is a handsome shrub, the dark green, pinnate leaves being distinctly ornamental. Some forms of this species are freer in growth and more floriferous than others—details which should be borne in mind by intending planters. *F. W. J.*

FORESTRY AT THE BRITISH EMPIRE EXHIBITION.

The Scottish Exhibit.

As explained in the previous article (see p. 238) two separate sub-committees worked in the preparation of the exhibits, one for England and Wales, the other for Scotland. The Scottish sub-committee was representative of professional and trade interests, with the Earl of Leven and Melville as Chairman. Sir Robert Lorimer, A.R.A., R.S.A., acting in a honorary capacity, undertook to design a timber building suitable for a Village Hall, and the hall was built by Messrs. William Black and Sons, Brechin, from timber supplied by numerous Scottish firms. Further, four Scottish firms of nurserymen undertook to lay out an area of ground as a miniature forest and arboretum.

The hall is seventy-two-and-a-half feet long and twenty feet wide, and is of very attractive outline. Built on brick foundations, the framework is of Scots Pine, the lower part of the walls being weather-boarded with wavy-edged Wych Elm, and the upper part with Scots Pine. There are three windows in each side, and the roof is covered with creosoted Pine shingles. Inside, the walls and ceiling are lined with deal and the ceiling is decorated with historical paintings by the members of the Society of Scottish Artists, each subject being given a special panel of Birch ply-wood, the panels being separated from each other by deal moulding.

Round the sides of the building are arranged planks and boards of various kinds of timber, Scots Pine, Larch and Spruce being specially prominent, those from H.M. The King, Balmoral, The Duke of Buccleuch, Sir Hugh Shaw Stewart and the Royal Scottish Arboricultural Society being specially noticeable.

Exhibits of more than ordinary interest are a transverse section, a plank, and a photograph of one of the "parent" Larches sent from Dunkeld by the Duke of Atholl, who has also sent a very fine plank of Weymouth Pine. Other good timber specimens are to be seen of Douglas Fir, Oak, Ash, Birch, Elm, Sycamore, &c. A good trade exhibit of timber is made by Messrs. James Jones and Sons, of Larbert, whilst in the opposite corner of the building Messrs. Ben Reid and Co., nurserymen, of Aberdeen, show forestry tools and samples of tree seeds.

In the centre of the hall are numerous exhibits representing various phases of forestry operations and the manufacture of home-grown timber. Conspicuous are models of boxes and gates from Messrs. A. and G. Paterson, Ltd., Aberdeen and Glasgow; turnery from Messrs. Andrew Bertram, Edinburgh; model of a water-wheel saw-mill from Messrs. Peter M'Ainsh, Crieff; tables from Messrs. Wm. Black and Son, Brechin; two Yew chairs from Mr. F. R. S. Balfour; finely carved Oak furniture from Messrs. Scott, Morton and Tynecastle Co., Edinburgh; chairs of Elm from Mr. Robert Rintoul, Edinburgh; and numerous other objects.

One end of the hall is given up to a forestry exhibit from H.M. Forestry Commission. Here may be seen practical demonstrations of the Commission's activities. They include a plan of Tintern Woods; photographs of sample plots of various species of trees framed in the kind of wood represented by the tree in each photograph; photographs of the forest areas of Inchnacardoch and Auchterawe near Fort Augustus, Glenhurich, in Argyllshire, Thetford, in Norfolk, and Wareham, in Dorset. Other exhibits include a model of an afforestation scheme at Portclair, Inverness-shire, a model of a seed-sowing machine, a model of a carriage for transporting young plants over marshy or hilly ground; transplanting boards, wooden toys, diseases due to fungi and insect agency, &c.

Outside the hall are large photographs of forest scenery, a pole of hybrid Larch (Larix eurolepis), eleven years old and nearly fifty feet high, exhibited by the Duke of Atholl, and a fine young Japanese Larch from the Duke of Roxburgh; also garden seats from Messrs. John Macdonald, Ltd., Inverness.

The living plant exhibit was formed by Messrs. Learmont, Hunter and King, Dumfries; Messrs. Austin and M'Aslan, Glasgow; Messrs. Ben Reid and Co., Aberdeen; and Messrs. Smith and Meldrum, Forfar. The ground is divided by a brook or burn. On one side are planted various ornamental Conifers and other trees and shrubs suitable for garden or park decoration. The other side is given over to a miniature forest. High and low ground and wet and dry soils are represented, each being planted with suitable subjects. Two mounds represent in miniature a colliery spoil heap six hundred feet high, and a hill eight hundred feet high, both being planted with trees suitable for the several conditions and aspects found in such positions. There is also a small nursery with beds of two-years old seedlings and two-year, one-year transplants. Considering that the ground is heavy, unyielding clay, and that nothing could be planted before April, it is wonderful how well all these young plants look. The beds of seedlings and transplants are particularly vigorous and the whole area reflects very great credit upon Mr. Hunter, who personally looked after the planting operations. The nurserymen labelled all their plants, but unfortunately they elected to use names still retained in some catalogues but which are hopelessly incorrect, as, for instance, Abies pungens glauca for Picea pungens glauca, although in a pamphlet distributed from the exhibit the names appear in a proper manner. We understand that an attempt was made to get the exhibitors to adopt a modern system of nomenclature, and it is a pity that such advice was not followed, for it would have made a very interesting exhibit of far greater general value.

The Scottish sub-committee has issued an interesting pamphlet explaining their exhibit, which can be obtained on application to the attendant in the hall. This pamphlet also contains a list of the institutions and individuals contributing towards the expense of the exhibit. We recommend all who are interested in home forestry or the use of home-grown timber to pay a visit to the Home Forestry Section which is situated near the Hongkong and British Guiana Pavilions at Wembley.

BULB GARDEN.

NERINE BOWDENII.

One of the finest of hardy bulbous plants is Nerine Bowdenii, and any doubt as to its hardiness was dispelled last winter when, here in Gloucestershire, on the Cotswolds, it withstood several frosts of twenty degrees and over. N. Bowdenii is very beautiful during September and October, either on the higher parts of the rock garden or in the hardy bulb border. Revelling in a deep and well-drained loam, it should remain undisturbed for years; the bulbs should be covered to a greater depth than is usually recommended for pot culture, and, of course, the maximum amount of sunshine is desirable.

Partially evergreen, the light green leaves are refreshing, but the crowning glory is the large umbel of clear pink flowers which are very persistent. We are experimenting with the popular and vividly coloured N. Fothegillii major in the open air, but I have considerable doubt as to its behaviour in our usually severe winters. *Ralph E. Arnold, Cirencester.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 78-84).

(*Continued from p.* 200).

ENGLAND, SOUTH.

Kent (*continued*).—The Apple crop is very patchy in places, and Plums are very thin owing to the very wet and cold nights when in bloom. Pears are good, and Gooseberries and Currants gave excellent crops. Strawberries, too, averaged a good yield, and Raspberries were plentiful, especially Loyal George and Pine's Royal. The soil is chalky. *J. H. Shann, Betteshanger Park Gardens, Eastry.*

——All fruit trees bloomed remarkably well, but owing to bad weather the flowers did not set, Apples generally being disappointing. Plums are very thin and some orchards have scarcely any fruit. Cherries were an extremely fine crop and the quality was excellent. Strawberries were the best crop for some years, the heavy rains coming just in time to swell the fruits. Raspberries and Black Currants were heavy crops and of excellent quality. Pears, in some localities are a fine crop. Fruit trees of all kinds have been very clear of pests and the growth is vigorous and healthy. *J. G. Weston, Ashford.*

Middlesex.—Most Apple trees flowered well, but no doubt owing to last season's heavy crops, together with a long spell of heavy rains during the flowering period, the fruits set badly. Some varieties, such as Bramley's Seedling, are bearing satisfactorily. Dessert varieties are below the average and Plums are very poor. Peaches, Pears, and Cherries are abundant while other mixed crops are about the average. The soil is light, resting on gravel. *H. Markham, Wrotham Park Gardens, Barnet.*

——The fruit crops here are very much below the average and only trees in sheltered positions are carrying good crops. Apples and Pears are complete failures. Morello Cherries were scarce and there were practically no Plums. Raspberries were good and Strawberries produced a good crop of excellent quality. Red and White Currants were, on the whole, satisfactory, while Black Currants were only of moderate quantity. The soil is a heavy, retentive loam, resting on clay, and the natural drainage is bad. *James A. Paice, Sunnyfields Gardens, Mill Hill.*

——Like all flowering trees and shrubs, the fruit trees were a mass of blossom, but the promise of a bumper fruit crop has not materialised. James Grieve and Lord Grosvenor Apples bear heavy crops, but other varieties are very thin. Pears are fairly even and Plums in some cases carry heavy crops. Small fruits are generally unsatisfactory. *Geo. H. Head, Fulwell Park Gardens, Twickenham.*

Surrey.—Apples such as Stirling Castle, Keswick Codlin, Blenheim Pippin and Worcester Pearmain, are carrying good crops of sound fruits, though the trees are attacked by caterpillars and American blight: the trees are old and all cropped well last year. Most varieties of Pears are laden with fruit while Victoria and Early Prolific Plums (on walls) have done well. Hale's Early and Stirling Castle Peaches produced good crops nad Lloyd George Raspberries are excellent. Red, White, and Black Currants as well as Gooseberries, were full crops. Strawberries did not set very well and Filberts show a good, clean crop. The soil here is light and sandy. *James T. Weston, Uppercourt Gardens, Esher.*

——Apples are scarce in this district, more especially dessert varieties. The trees bloomed very freely but a quantity of the flowers were deformed and some leaves seemed to push from what was thought to be flower buds. The trees as a whole are free from insect pests and the foliage is healthy. Plums were a good crop on many of the trees on walls, but standard trees in the open did not fruit well. Pears are very plentiful in this district. Small fruits gave crops with the exception of Gooseberries. Strawberries have been very satisfactory. *F. Collier, Gatton Park Gardens, Reigate.*

—Apples and Plums are complete failures. The trees are clean and have made good growth, so that given a sunny autumn, there may be good crops of fruit next year. Raspberries and Currants of all kinds have been very fine and free from blight. Pears are a fairly good crop while Cherries and Gooseberries were well up to the average. *F. Jordan, Ford Manor Gardens, Lingfield.*

(*To be continued*).

HOME CORRESPONDENCE.

Checking the Growth of Pineapple Crowns --I have been asked if it is justifiable to disqualify a competitor at a flower show for staging a Pineapple with its crown checked in growth by being pierced. My reply is that it is perfectly legitimate to stage a fruit that has been treated in this way. Curtailing growth in this manner is simply a detail of culture, similar to that of thinning the berries of a bunch of Grapes, or dressing the petals of a Chrysanthemum. Some of the Pineapples that have been exhibited from time to time at the R.H.S. Hall from The Hendre Gardens, had their crowns checked in growth by this means, and at no time was the practice questioned. A small gimlet is suitable for the purpose, but pains should be taken to apply it to the immediate centre, otherwise disfigurement may be caused. This calls to memory an amusing incident that took place at a local flower show where some Pineapples carrying very large crowns were staged. A humorist friend of the exhibitor, upon being asked by a reporter of a local newspaper, what remarks would be applicable to the fruits, was informed that the fruits were fine examples of good culture, "particularly on account of their very big tops." Exceptionally high temperatures, accompanied with an unduly moist atmosphere, as well as excessively stimulating food, encourages the growth of crowns, the Smooth Cayenne variety being especially liable to disfigurement in this way. The price of coal and the free importation of Pineapples appears to have almost entirely caused the discontinuance of Pine culture in this country, but foreign grown fruits as imported, though handsome in appearance, are greatly inferior in flavour to those of a good home-grown Queen. With respect to cost of firing, where heat is used for other purposes, the extra coal consumed for ordinary Pine-pits amounts to comparatively little. *T. Coomber, Broadstairs.*

Freesias Planted Out.—In reply to the Rev. J. Jacob's question (see p. 164), Has anyone tried planting out Freesias?—I may state that at Kimmeridge, Dorset, before the war, I drilled the small tubers of Freesia refracta alba in a bed situated in full sunshine. Before these grew to flowering size the gardener planted Sweet Williams over them, but in spite of this they flowered and even with the neglect which occured while I was away at the war, they continued to flower. I dug them up after the war as I was short of stock for potting. Since then I have planted out most of the coloured Freesias which have flowered and withstood the winters. Of course, the growth of all Freesias is shorter out-of-doors than under glass. *W. Van de Weyer, Clyffe House, Dorchester.*

SOCIETIES.

ROYAL HORTICULTURAL.

October 7 and 8.—The annual fruit and vegetable show, held in the R.H.S. Hall, Vincent Square, Westminster, on the above dates, was on the whole a success. For the past two or three years this exhibition has been held in conjunction with the Holland Park Hall Show under not altogether very satisfactory conditions. It was indeed a pleasure to see these important shows again housed in the Hall, and were it not for the fact that the trade displays of hardy fruits were not so extensive and attractively staged as in former years we should have stated that the show would have compared favourably with any that have previously been held. In spite of the unfavourable fruit year the quality of hardy fruits was exceptionally good and Apples, particularly, were well coloured and clean. The collections of hot-house fruits were also a feature and the fruit exhibits generally were excellent.

Vegetables were likewise well shown and Onions, Carrots, Turnips, Brussels Sprouts and Peas were good. Runner Beans were rather coarse and of pale colour; Beets were badly marked with white in the flesh; and Potatos were generally very small. There were a few trade exhibits, but none of outstanding merit The Committees sat as usual and made awards to plants, but there were no floral groups, the Hall being well filled with vegetables and fruits.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the Chair), Messrs. Gurney Wilson (Secretary), Jas. O'Brien, J. Wilson Potter, Arthur Dye, Richard G. Thwaites, E. R. Ashton, W. J. Kaye, John C. Cowan, T. Armstrong, A. A. McBean, H. G. Alexander, Charles H. Curtis, Henry H. Smith, H T. Pitt, Frederick J. Hanbury, S. W. Flory, J. E. Shill and Fred. K. Sander.

First-Class Certificates.

Laelio-Cattleya Sargon var. Gloriosa (*L.-C. Lustre* × *C. Hardyana*), from Lt.-Col. Sir George L. Holford, K.C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander). The variety shown was the finest of a grand hybrid raised at Westonbirt and of which several forms have received awards. The plant was a perfect example of cultural skill and carried a strong spike of four flowers of perfect shape and rich colour. The blooms were nine inches across, the petals nearly four inches wide and the labellum broad and well displayed. The sepals and petals are bright mauve-purple, the lip ruby-purple with gold lines from the base.

Laelio-Cattleya Profusion var. Arabic (*L.-C. Serbia* × *C. Hardyana*), from Messrs. J. and A. McBean, Cooksbridge. The third form of this remarkable cross to receive recognition by the Committee. It is indeed a standard type, good in all its forms. The plant bore a spike of four massive flowers with mauve-purple sepals and petals and broadly expanded violet-crimson lip with light yellow disc and narrow white margin.

Other Exhibits.

Messrs. Stuart Low and Co., Bush Hill Park, Jarvisbrook, Sussex, showed Laelio-Cattleya Mrs. Medo var. Ruby, two forms of which have previously gained awards. The variety now shown had clear chrome-yellow sepals and petals and crimson lip with a gold shade. Messrs. Stuart Low and Co. also sent their fine yellow Brasso-Laelio-Cattleya C. W. Natthes.

Messrs. Sanders, St. Albans, sent a selection of Brazilian Oncidiums, including O. varicosum Rogersii with a branched spike of over one hundred clear yellow flowers; O. v. apiatum, with dark purple petals and base to the lip; O. Forbesii coloratum and the finely-coloured Cattleya Fabia var. Arethusa.

Messrs. Flory and Black, Slough, showed a selection of novelties, including Cattleya Mildred (C. J. Ansaldo × C. Warscewiczii Frau M. Beyrodt), the sepals and petals of which are cream-white, and the front of the lip violet-crimson; Laelio-Cattleya Jean (L.-C. Thyone × C. Adula), clear Canary yellow with Tyrian-purple lip; Laelio-Cattleya Colmaniana var. Vivid (C. Dowiana × L.-C. callistoglossa), with rich mauve flowers with violet-purple lip. Although one of the best Laelio-Cattleyas, an award to it does not appear in the R.H.S. list. Messrs. Flory and Black also showed Brasso-Cattleya Princess Patricia, Langley variety (B.-C. Cliftonii × C. Enid), a very fine hybrid with much of the characters of B.-C. Cliftonii magnifica. Mr. J. E. Shill, gardener to Baron Bruno Schröder, showed to the members of the Committee a grand new Brasso-Laelio-Cattleya of the famous strain evolved at The Dell, with perfectly-formed yellow flowers of great beauty. The variety has not yet received a name.

Floral Committee.

Section A.—*Present:* Messrs. H. B. May (in the Chair), J. F. McLeod, Arthur Turner, H. J. Jones, J. M. Bridgeford, W. Howe, Donald Allan, Hugh Dickson, E. R. Janes, Chas. E. Pearson, W. P. Thompson, D. B. Crane, H. R. Darlington, W. B. Gingell, J. B. Riding and Andrew Ireland.

Section B.—*Present:* Messrs. W. J. Bean (in the Chair), G. Reuthe, G. Harrow, G. Yeld, H. V. Warrender, W. B. Cranfield, Clarence Elliott, W. G. Baker, F. G. Preston, T. Hay, R. W. Wallace, R. C. Notcutt, E. A. Bowles and Reginald Cory.

First-Class Certificate.

Escallonia montevidensis.—A handsome late-flowering shrub, but one not perfectly hardy in any but specially favoured districts. The lanceolate leaves are bright green and make a capital setting for the branching spikes of small white flowers. It is closely allied to E. floribunda, but has larger flowers and a more rounded truss besides minor botanical points. E. montevidensis is a native of S. Brazil and Uruguay. Shown by Messrs. Robert Veitch and Son, Exeter.

Awards of Merit

Primula siamensis.—A very distinct species, about five inches high. The leaves are very like those of the common Primrose, pale green, prominently veined, with irregular, toothed margins. The spike carried five expanded flowers and two buds. The flowers are semi-pendant, about an inch across, soft lavender, with white centre. The calyx and stem are covered with white meal which adds to the effectiveness of the inflorescence. Shown by the Director, Royal Gardens, Kew.

Hippeastrum sp.—This plant was unnamed and the award was made subject to identification. The flowers are white with a long green tube. The segments recurve prettily and the flowers are pendulous on the end of a stout scape. Shown by Major A. Pam, Wormley Bury, Broxbourne.

Kniphofia Nelsonii.—An old garden plant and a valuable one for autumn flowering; the flowers are orange coloured and disposed rather loosely on elegant spikes. This is one of the smaller-flowered Kniphofias, but it is very free and has long, slender, grassy leaves. Shown by Mr. R. C. Notcutt, Woodbridge.

Aster Mme. E. Besnard.—A showy Amellus variety, with flowers fully two inches in diameter and of a rich rosy-lilac colour. The blooms are of good form, the ray florets being broad for the size of the blooms. This is of French origin. Shown by Mr. F. G. Wood.

Aster Well's Favourite.—A useful Amellus variety, free-flowering, but with rather starry blooms. The latter are rather less than two inches broad and of a pleasing rosy-lilac or mauve shade. Shown by Mr. W. WELLS, JUN.

Aster Mrs. Pierpont Morgan.—A good Michaelmas Daisy with moderately tall, graceful, arching growths, and bearing an abundance of pale blush-pink flowers with pale yellow disk. Shown by the HON. VICARY GIBBS (gr. Mr. E. Beckett), Aldenham House, Elstree.

Chrysanthemum Primrose Poiteau.—A bold and rather large-flowered early variety of soft primrose-yellow colour, and evidently a sport from Blanche Poiteau. The florets are broad, a trifle stiff, and very slightly cupped at the tips. Shown by Messrs. LOWE AND SHAWYER, Uxbridge.

Chrysanthemum Reginald A. Roots. — This very beautiful variety has soft ivory-white flowers. The blooms are of good size, six inches broad, without stretching out the lower florets, and the latter are narrow and pleasingly twisted at the tips, making up a very elegant bloom. Shown by Mr. W. ROOTS, Hollicot, Cranford, Middlesex.

Chrysanthemum J. Cotton.—A handsome, early-flowering Japanese variety of excellent form and substance. The colour is brilliant Chestnut-red, with old gold reverse. Shown by Mr. G. CARPENTER, West Hall Gardens, Byfleet.

Fruit and Vegetable Committee.

Present: Messrs. J. Cheal (in the Chair), P. C. M. Veitch, G. Kelf, H. S. Rivers, A. H. Pearson, G. F. Tinley, W. F. Giles, P. D. Tuckett, E. Laxton, W. Poupart, H. Prince, F. Jordan, J. Wilson, E. Neal, T. Pateman, E. A. Bunyard, C. G. A. Nix, Jas. Vert, Ed. Harris, John Harrison, John Basham, W. Crump, E. Beckett, A. C. Smith, G. Woodward, A. W. Metcalfe, J. Allgrove, H. Markham, W. Bates, H. N. Rawes and W. H. Divers.

There was a very full committee and much work was forthcoming. Although numerous new fruits, principally Apples, were presented for award, none was granted that distinction. The most promising of the novelties were a seedling Apple named Laxton's Pearmain and Pear Sir Harry Veitch.

The Apple was one of several shown by Messrs. LAXTON Bros., who had also the new dessert Apple Lord Lambourne, raised from Worcester Pearmain and James Grieve, in good condition, and their fine new Apple, Laxton's Superb.

Mr. Allgrove's Pear is small, but of excellent flavour, like that of Seckle, and a deputation of the Committee will report on the cropping qualities, &c., next autumn.

A Cultural Commendation was awarded to Mr. A. T. Goodwin, Roseholm, Maidstone, for excellent dishes of Lady Palmerston, Salway, and Golden Eagle Peaches.

Messrs. J. R. PEARSON AND SONS showed splendid fruits of Apple Charles Eyre, a variety as big as Bedfordshire Foundling. It received the R.H.S. Award of Merit in 1911.

Mr. A. P. GOOD showed Apple Bushy Grove, which was recommended for inclusion in the trial of commercial varieties at Wisley.

Branches of two new Apples crowded with fruits were shown by Mr. N. F. BARNES, Eaton Hall Gardens. They were named Millicent Barnes (Cox's Orange Pippin × Gascoyne's Seedling), like Cox's Pomona in colour and shape, and Arthur W. Barnes (Gascoyne's Seedling × Cox's Orange Pippin), very like the last-named parent in size and shape.

Mr. PARSONS showed Worcester Berry, the result of a cross between Boskoop Giant Black Currant and Whinham's Industry Gooseberry.

Mr. J. C. ALLGROVE had pot trees of his new Apple, S. T. Wright, a very showy fruit, with high colour, the skin being rose-pink.

Trees in pots with fruits and gathered fruits of Apple John Waterer were shown by Messrs. WATERER, SONS AND CRISP, LTD.

Messrs. T. RIVERS AND SON showed orchard-house grown Apples and Pears, the late Cherry Guigne de Winkler, and The President Plum.

Some excellent Apples were shown by the Horticultural College, Swanley.

Messrs. DANIEL BROS. exhibited their late Black Currant and a few other fruits.

Messrs. BUNYARD AND Co. showed a small but select exhibit of Apples and Pears.

Messrs. SUTTON AND SONS had varieties of Capsicums and Chilis in a group near the entrance.

Competitive Classes.

FRUITS GROWN UNDER GLASS.

The classes for dessert indoor fruits comprised two for collections and nine for Grapes.

The more important of the classes for collections called for nine dishes, six kinds at least, and the first prize was the Silver Hogg Medal and £6.

There were four excellent exhibits, and competition was very close between the whole of the exhibitors. The first prize was awarded to CAPT. MALDWIN BALDWIN, Cadland Park, Southampton (gr. Mr. L. Smith). He showed large bunches of Muscat of Alexandria and Black Hamburgh Grapes, with big shoulders. The black Grapes were very fine, but the Muscats were somewhat green and not so well finished as in some other collections. His Triomphe de Vienne Pears were excellent, and he had large late Devonian Peaches, Coe's Golden Drop Plums, James Grieve Apples, Brown Turkey Figs, and Sutton's Superlative Melon, the last a very pretty fruit.

Second, Mrs. T. S. HALL, Crickel St. Thomer, Chard (gr. Mr. G. Richardson), whose Muscat Grapes, Doyenné du Comice Pears, Nectarine Peaches, and Cox's Orange Pippin Apples, were all good. Third, SIR CHAS. NALL-CAIN, Brocket Hall, Hatfield (gr. Mr. T. Pateman), whose Grapes, both Muscat of Alexandria and Madresfield Court were splendid, and Doyenné du Comice Pears, the finest in these collections. His Cox's Orange Pippin Apples and Salway Peaches were also of excellent merit.

There were three competitors in the smaller class for six dishes of ripe dessert fruits, and the first prize was won easily by VISCOUNT HAMBLEDON, Greenlands, Henley-on-Thames (gr. Mr. W. Turnham). His Grapes comprised large bunches of Alicante and Chasselas Napoleon. The other fruits were Marguerite Marillat and Pitmaston Duchess Pears, Cox's Orange Pippin Apples, and Melon Baron Hamelton; second, F. C. STOOP, Esq., West Hall, Byfleet (gr. Mr. G. Carpenter), who showed small, but well finished, bunches of Alicante Grapes, also Muscat of Alexandria Grapes, Pear Durondeau, Apple Ellison's Orange, Holborn Favourite Melon, and Brown Turkey Figs. Third, N. C. VICKERS, Esq., Newsells Park, Royston (gr. Mr. W. Watkins).

GRAPES.

The Grape classes were disappointing, even when allowance is made for the unfavourable season. The value of the prizes was enhanced as compared with last year, and the poor results were somewhat surprising.

Only one exhibit was forthcoming in the principal class, which was for a collection of six distinct varieties. The exhibitor was Sri WILLIAM LAWRENCE, Bart., Burford, Dorking (gr. Mr. J. Brown), and he showed Prince of Wales, Chasselas Napoleon, Gros Maroc, Muscat of Alexandria, Lady Hutt and Appley Towers. Lady Hutt was very good and the bunches of Chasselas Napoleon well finished. One of the bunches of Muscat of Alexandria was very large, with shoulders; the other bunch was smaller and very dissimilar in shape. Prince of Wales was not nearly finished. This was adjudged the best exhibit of Grapes shown by an amateur and was thus awarded the George Monro Memorial Cup.

In the class for three varieties three competed, and G. MAYER, Esq., Woldingham (gr. Mr. W. Sayer), excelled with fine pieces of Muscat of Alexandria, shapely, well-finished bunches of Madresfield Court and big bunches of Prince of Wales, a difficult grape to finish, especially in a sunless season, the berries showing lack of colour; second, Mrs. T. S. HALL, Chard (gr. Mr. G. Richardson). The berries were well finished, and both Appley Towers and Muscat of Alexandria, though on the small side, were of first-rate quality, whilst the big bunches of Muscat Hamburgh were outstandingly good.

It was very disappointing to find that only five Grape growers in Great Britain were represented in the class for the universally grown Black Hamburgh variety, and of these five exhibits not one could be described as above the average quality; the berries lacked that black, hammered appearance which is usually associated with the Black Hamburgh Grape. The first prize was awarded to Capt. MALDWIN DRUMMOND, and the second to Sir WILLIAM LAWRENCE, whose bunches were big shouldered and evenly matched.

There was only one exhibit in the class for Mrs. Pince variety and the first prize was awarded to G. MAYER, Esq., for long bunches of poorly finished berries.

The class for Black Alicante attracted good competition, the number of exhibits being eight. The first prize was awarded to Capt. R. B. BRASSEY (gr. J. G. Quinn), Cottesbrooke Hall, Northampton, for a very excellent pair of shapely, well-finished bunches, both of fine weight; second, Mrs. W. RAPHAEL (gr. Mr. H. Brown), Castle Hill, Englefield Green, with bigger bunches with prominent shoulders, but the quality was not quite so good; third, Sir CHAS. NALL-CAIN.

In the class for Madresfield Court, Capt. BRASSEY was an easy first, his berries being beautifully finished and the bunches long, tapering and very shapely; second, Mrs. A. WILSON (gr. Mr. J. Earl), Tranby Croft, Hull, whose bunches were small, but the quality was exceedingly good.

The large berried Prince of Wales variety was shown best by G. MAYER, Esq., and one of his bunches was fairly well finished, but the other, and those shown by Sir WM. LAWRENCE, to whom the second prize was awarded, were of very poor colour and finish.

In the class for any other variety of black Grape, there were three entries and none of them was very meritorious. The first prize was awarded to Sir BERNARD GREENWALL, Bt. (gr. Mr. W. Lintott), Morden Park, Surrey who showed Lady Downes.

There was better competition in the class for two bunches of Muscat of Alexandria, and the first prize bunches stood out conspicuously by reason of their rich colour and beautiful bloom. They were shown by Lady DURING LAWRENCE (gr. Mr. J. Rutherford), Kemp Ride, Ascot; 2nd, Sir CHAS. NALL-CAIN, who showed two bunches of large size and well finished berries, but not so richly coloured as those shown by Lady DURING LAWRENCE.

The old Buckland Sweetwater shown by Mrs T. S. HALL was adjudged the best variety in the class for any other white Grape. The new Cote House Seedling, which received an Award of Merit at the last meeting of the Society, was placed second, the exhibitor being Mrs. LEOPOLD DE ROTHSCHILD (gr. Mr. G. Reynolds), Gunnersbury Park, Acton. Golden Queen exhibited by A. P. BRANDT, Esq. (gr. Mr. J. W. Barks), Bletchingley Castle, was placed third.

Collection oe Hardy Fruits.

It was very gratifying to notice that better competition resulted in this very important class, following the greatly enhanced value of the prizes. On this occasion there were six entries and all through the quality was exceptionally good, so that competition was keen. The collective exhibits made a very big display and was one of the features of the fruit show. The first prize was awarded to Captain Maldwin Drummond (gr. Mr. L. Smith), for an exhibit of outstanding merit. He included extraordinarily large specimens of Doyenne du Comice, Pitmaston Duchess, Roosevelt, and Margaret Marillat Pears; Lane's Prince Albert, Peasgood's Nonesuch, Stirling Castle, Warner's King and Eclipse culinary Apples also fine fruits of Chas. Ross, Cox's Orange Pippin and Ribston Pippin dessert Apples; good fruit of Wydale, Grand Duke, Monarch, Coe's Golden Drop and President Plums. The exhibit also contained late Devonian and Thomas Rivers Peaches, Cherries and Figs; second, Major F. J. B. Wingfield Digby (gr. Mr. E. Hill), whose Plums and Peaches on the front row were very good, the dish of Late Orange Plum being very noticeable. Of the Pears there were splendid fruits of Doyenne du Comice, St. Luke and Blickling. Sir Chas. Nall-Cain (gr. Mr. T. Pateman) was placed third and the outstanding fruits in his exhibit were Coe's Golden Drop, Coe's Violet and Late Transparent Gage Plums, Rev. W. Wilks, Emperor Alexander The Queen and Chas. Ross Apples and very large Doyenne du Comice Pears.

Of the half-a-dozen or so most praiseworthy exhibits of sixteen dishes of cooking and eight of dessert Apples, the best was from Sir Charles Nall-Cain (gr. Mr. T. Pateman), Brocket Hall, Hatfield. The dessert fruit was characterised by very high colour and perfect shape. The chief varieties were Charles Ross, Ellison's Orange, Laxton's Superb, and Rival. Chief amongst the culinary varieties were Emperor Alexander, S. T. Wright, Gascoyne's Scarlet, Peasgood's Nonesuch, and The Queen.

Captain Maldwin Drummond (gr. Mr. T. Smith), Cadland Park, Southampton, was a very good second. His dishes of James Grieve and King of the Pippins were well nigh perfect, while Emperor Alexander, Rev. W. Wilks and Bramley's Seedling were equally good examples of culinary Apples. Third Sir Edward Pearson (gr. Mr. W. Stevenson), Brickendonbury, Hertford, who had delightful dishes of Duchess of Gloucester and The Houblon.

The only exhibit of twelve dishes of Apples, eight cooking and four dessert, was by V. C. Vickers, Esq. (gr. Mr. W. Watkins), Newsells Park, Royston, who was deservedly awarded the first prize. He had splendid dishes of Ribston Pippin, Lady Sudeley, Rival and Cox's Orange (dessert) and Warner's King, Peasgood's Nonesuch and Blenheim Pippin of the culinary sorts.

Of the four collections of six dishes of cooking Apples the best was shown by Captain Maldwin Drummond, who set up splendid dishes of Emperor Alexander, Gloria Mundi, Lane's Prince Albert, Loddington, Peasgood's Nonesuch and Stirling Castle. Sir Charles Nall-Cain, in his second prize collection showed beautiful colour on Emperor Alexander, Mere de Menage, and Peasgood's Nonesuch; third Sir Edward Pearson.

There was the same number of exhibits of six dishes of dessert apples, and here the first prize was won by F. C. Stoop, Esq. (gr. Mr. G. Carpenter), West Hall, Byfleet with splendid dishes of Ellison's Orange, Chas. Ross, Rival, G. Carpenter, Ribston Pippin, and Cox's Orange. J. H. Loudon, Esq. (gr. Mr. J. Bond), Olantigh, Wye, Kent, was a good second and his very best dishes were of Rival, Chas. Ross and Cox's Orange; third, Captain N, G. Chalmers-Hunt (gr. Mr. W. J. Wright), Garvel's Hall, Hertford.

Three exhibitors displayed eighteen remarkable good dishes of dessert Pears each. The first prize was won by Captain Maldwin Drummond with such varieties as Margaret Marillat, Triomphe de Vienne, Louise Bonne of Jersey, Doyenné Bussock and Charles Ernest. Sir Charles Nall-Cain, who was second showed Durondeau, Louise Bonne of Jersey, Beurré Hardy, Gansel's Bergamot, and Marguerite Marillat in his good collection; third J. H. Loudon, Esq.

There were three sets of three dishes of Plums and the best was shown by Lady Mary Morrison (gr. Mr. H. H. Miles), Fonthill House, Tisbury, who had excellent dishes of Coe's Golden Drop, Late Orange, and President, Capt. M. Drummond, who was second had Monarch, Coe's Golden Drop and President; third, Sir Chas. Nall-Cain.

Damsons were equally well represented and here Sir Chas. Nall-Cain won first place. He showed Farleigh (cluster), Frogmore Prolific and King of Damsons. Mrs. Cordeaux (gr. Mr. W. R. Scott) Bunny Park, Nottingham, was second and J. H. Loudon, Esq., was third.

Morellos were not quite so well coloured as we have seen them. Viscount Hambledon (gr. Mr. W. Lamham), Greenlands, Henley-on-Thames, was first; Captain R. B. Brassey (gr. Mr. J. G. Quinn), Cottesbrooke Hall, Northampton, was second.

The first prize autumn Raspberry, Heytor, shown by Sir Chas. Nall-Cain, was excellent, Capt. M. Drummond was second.

Out-door Figs were quite good. Hon. Mrs. Lyttelton, Wittersham House, Kent (gr. Mr. F. J. Wren) was first with Brown Turkey, and Capt. M. Drummond was second with the same variety.

Apples in Boxes.

There were only two exhibits in the class for market growers only, which required twelve standard boxes of Apples, cooking and dessert, suitable for market purposes. Mr. H. Barton, Hollesley Bay Colony, Woodbridge, showed twelve especially fine boxes. Not only was the fruit of high quality but the packing was excellent. His varieties were Worcester Pearmain, of very even size and brilliant colour, Ribston Pippin, Chas. Ross, Allington Pippin and Cox's Orange of the dessert varieties, and Lord Derby, Bismarck, Gascoyne's Scarlet, Lane's Prince Albert, Mere de Menage, Bramley's Seedling and Newton Wonder (Gold Medal).

Lt.-Col. H. Lumley Webb, Upchurch, Sittingbourne, the other exhibitor, had larger fruits which did not lend themselves for packing in the small boxes. King of the Pippins, Paroquet, Worcester Pearmain and Benn's Red were very highly coloured. (Silver Hogg Medal).

Special District Classes.

The regulations for these rather restrict competition but no doubt the object is to obtain as many different competitors as possible and so to spread the interest of the show over a wide area, but it cannot be said that this end was achieved for generally competition was poor, though the quality of most of the exhibits reached a high standard of excellence. In each territorial division there were two classes, one requiring six dishes of Apples, four cooking and two dessert, and the other was for six dishes of Pears.

In the Kent Class Canon Leigh won the first prize with a splendid collection, Chas. Ross and Cox's Orange were his dessert varieties, while his cooking sorts included Newton Wonder and Bismarck. The Hon. Mrs. Lyttelton was second. There were no Pears.

Competition was no better in the Surrey, Sussex and Hants division and here W. H. Myers, Esq. was first with Apples. He had well coloured fruits of Cox's Orange, Blenheim Pippin and Mere de Menage; F. J. Long, Esq. was second.

Wilts, Dorset, Somerset, Devon and Cornwall supplied both Apples and Pears. Lady Mary Morrison was first with the former and showed an admirable collection including Chas. Ross, Cox's Orange, Lane's Prince Albert and Peasgood's Nonesuch. J. A. Stidston, Esq., was second. Lady Mary Morrison was also first with excellent Pears of such varieties as Triomphe de Vienne, Souvenir de Congrés and Doyenné du Comice.

The first prize Apples in the Gloucester, Oxford, Bucks, Berks, Beds, Herts and Middlesex division were staged by Capt. Chalmers Hunt, who included Cox's Orange, Chas. Ross and Peasgood's Nonesuch in a good collection. Mr. S. Gardner was second. Mrs. Austin was first with Pears and she showed Beurré Bosc, Beurré Diel and Souvenir de Congrés of great merit.

In the Essex, Suffolk, Norfolk, Cambridge, Herts and Rutland division, Col. H. G. Lucas, Hobland Hall, Bradwell, Suffolk, won both first prizes. His Apples included Rival, Ellison's Orange, Hambling Seedling and Peasgood's Nonesuch, while his chief Pears were Marguerite Marillat, Doyenné du Comice and Pitmaston Duchess.

The Lincoln and Cheshire area provided some of the best fruits in the Counties classes. Mrs. Cordeaux, who was first with Apples, had magnificent fruits including Rival, Wm. Crump, Rev. W. Wilks, Newton Wonder, Lord Derby and Peasgood's Nonesuch. Capt. R. B. Brassey was first with Pears, also of great merit. He included Triomphe de Vienne, Louise Bonne of Jersey and Doyenné Bussoch. Mrs. Cordeaux was a very good second with Pears.

Of the Apples exhibited from Worcester, Hereford, Monmouth and Wales the best were shown by W. Evans, Esq., Craig Darn, Ruabon, who had beautifully coloured Cox's Orange, James Grieve, Emperor Alexander and Peasgood's Nonesuch. Mr. T. Jones, Bryn, Penylar, Ruabon, fully deserved the first prize for Pears. His fine half-dozen included Louise Bonne of Jersey, Durondeau and Conference. The Earl of Coventry, Severn Stoke, Worcester, was second.

From the six Northern Counties and the Isle of Man the most successful exhibitor was Mrs. Arthur Wilson, Tenby Croft, Hull, who was awarded both first prizes. Her Apples included excellent specimens of Rival, Cox's Orange and Peasgood's Nonesuch, while among the Pears were magnificent examples of Doyenné du Comice and Conference.

The only exhibitor from Scotland was Major C. F. Lloyd, Theeva House, Castle Douglas, and he showed only Apples, but they were highly creditable dishes of Lady Sudeley, Worcester Pearmain, and Cutler Grieve.

The Earl of Bessborough won both prizes open to growers in Ireland, with splendid fruits. Amongst the Apples were Cox's Orange, Ribston Pippin and Peasgood's Nonesuch with intense colour. The chief Pears were Souvenir de Congrés, Triomphe de Vienne and St. Luke. T. Sherrard, Esq., Douglas, County Cork, was second with good Apples.

There was no exhibit from the Channel Islands.

Nurserymen's Classes.

There were two classes for collections of hardy fruits shown by nurserymen, but no prizes were stipulated, the awards consisting of medals given at the discretion of the Council. The larger class was for an exhibit occupying thirty feet run by six feet of tabling. Mr. J. C. Allgrove, Langley, Slough, showed in the largest class the finest of these trade exhibits and staged a representative collection of Apples, Pears, Plums and Peaches in baskets daintily decorated with Ferns, Rose hips and autumn foliage. The fruits of such Apples as Gascoyne's Seedling, Washington, Emperor Alexander, Bramley's Seedling and the Rev. W. Wilks were of extraordinarily large size and of remarkably fine quality and this held good generally amongst the Pears and other fruits also (Gold Medal).

Mr. R. C. Notcutt, Woodbridge, had also a very attractive display of hardy fruits, the use of a dark velvet ground being in good taste, and Crabs and autumn berries interspersed on the black ground amongst the baskets were very pleasing. Amongst the numerous sorts we were especially attracted by the dishes of Cutler Grieve, Annie Elizabeth, Peasgood's Nonesuch, Wealthy, Allington Pippin, and Rival Apples, whilst of the Pears prominent dishes were Triomphe de Vienne, Doyenné Boussoch, and Uvedale's St. Germain (Standard Silver Cup).

The Barham Nurseries showed a very attractive exhibit of hardy fruits decorated with Dracaenas, Barberry fruits and tiny Conifers. Their fruits were of first quality and included such Apples as Baron Wolseley, Chas. Ross, Nancy Jackson, Crimson Bramley, Golden Spire, Newton Wonder and Belle de Boskoop (Silver Hogg Memorial Medal).

In the smaller class Messrs. Laxton Bros. exhibited a very attractive collection, the use of a violet ground being in good taste and served to throw the baskets of fruit in greater relief. There was a general collection of the best sorts of Apples and late Plums. Berried Barberries and Rhus foliage were used as decorations (Silver-Gilt Hogg Memorial Medal).

Messrs. S. Spooner and Sons also exhibited very excellent Apples and Pears, the former including fine fruits of Houblon, King Edward VII., Golden Spire, Cox's Orange Pippin, Chas. Ross and Wealthy (Silver Hogg Memorial Medal).

⁂ Our remarks on the single dish classes for fruits, and the vegetable classes, will be given in the next issue.

CARDIFF AND COUNTY HORTICULTURAL.

The thirtieth annual Show of this Society was held in the local Drill Hall and an annexe, on Wednesday, September 17. Hitherto it has been held in Sophia Gardens or other places in tents, but this year the weather proving so unfavourable the committee in their wisdom had made a happy choice.

The trade and other honorary exhibits were of a high standard, and one of the best non-competitive displays was from Reginald Cory, Esq. (gr. Mr. J. Smith), Duffryn, Cardiff. It consisted largely of Dahlias, the majority of which were raised at Duffryn. Among the most noteworthy varieties were Tipperary, brilliant crimson tipped with white; Florence Cory, of a colour resembling the Queen Alexandra Rose; Peach Blow and Sienna. The exhibit was beautifully arranged across one end of the Hall; Bamboos, Eulalias and bronze foliage were arranged amongst the flowers at the back. In front of this group on the floor space were the choicest and most remarkable plants in the Show. They consisted of well-grown Cotyledons and Semperviviums; of the former the more interesting were C. rosea, C. Devensis, well-coloured C. metallica, C. glauca gigantea, a plant with mealy foliage and red margins, C. edulis, and a rare hybrid of unknown parentage, but probably between the metallica and glauca sections. The Canary Island Sempervivium holochrysum was represented by a fine specimen. This exhibit was awarded a Gold Medal. A Gold Medal was also awarded to Messrs. Blackmore and Langdon, Bath, for an exhibit of Delphiniums, Phloxes in variety, Asters, of which the variety King George was very conspicuous, and choice Begonias.

Messrs. Isaac House and Son, Bristol, were represented by a superb display of their famous strain of Scabiosa caucasica, including two fine. dark forms named Isaac House and Diamond respectively, and White Queen (Gold Medal).

Messrs. W. Treseder, Ltd., Cardiff, were awarded a Gold Medal for a remarkable exhibit of Dahlias, most sections of the flower being well represented. Honorary exhibits were also displayed by Messrs. John Crossling, Penarth, Messrs. W. Hill and Son, Mr. H. W. Evans, Llanishen, and Mr. S. Treseder, Ely, all of whom received an Award of Merit. In many of the competitive classes competition was keen, especially for a decorated dinner table. Here the predominant colour schemes were orange and bronze, and the first prize was won by Mrs. J. Allan Gibbs, Llanischen, whose table was pleasingly decorated with Thalictrum dipterocarpum, Streptocarpus, of mauve shades, Asparagus plumosus, and Smilax.

In the open class for a collection of Roses, on a space ten feet by four feet, there were three entrants, the winner being Mr. J. Mattock, Oxford. This exhibit contained clean, well-grown flowers, the whole being admirably staged. He had noble pillars of Isobel, Padre, Los Angeles, baskets of Queen Alexandra, Golden Emblem, K. of K., Ophelia and Independence Day. These being noteworthy sorts in an exhibit containing upwards of thirty varieties. Mr. A. S. Dunton, Wolverhampton, was placed second.

The Dahlia classes were well filled, but competition was not keen in the classes for Chrysanthemums and Michaelmas Daisies.

In the open class for Carnations, Mr. C. Engelmann, Saffron Walden, won the first prize for a collection occupying a space of ten feet by three feet.

In the class for Sweet Peas, arranged on a space nine feet by four feet, a Challenge Cup was offered as the first prize and this was won by Mr. D. Williams, Dinas Powis, with a meritorious display. Mr. A. S. Dutton, Wolverhampton, was placed second, and Mr. W. J. Payne, Bath, third.

For a collection of hardy flowers, shrubby and bulbous plants admitted, Messrs. Wm. Treseder, Ltd., were first for an exhibit containing Thalictrum dipterocarpum, Helianthus, Gladioli, Phloxes and other flowers. Messrs. Rich and Co., Bath, came second, and here the large Gaillardia Sunshine stood out to advantage. It is a fine light yellow flower with a very narrow, dark centre.

Some ten classes were devoted to fruit, and those for Apples and Pears were well filled. For a collection of dessert fruit Sir H. Webb (gr. A. Cole), Castleton, was first, and Mr. W. H. Brain, Cardiff, second. The best two bunches of Grapes were shown by Sir T. Mansell Franklen, Cardiff; second, Sir H. Webb. Mr. W. H. Brain was placed first in four classes for Apples, and Capt. Fletcher, Port Talbot, excelled in three classes.

Vegetables occupied a large space in the annexe, and some well-grown produce was forthcoming.

The Glamorgan Beekeepers' Association exhibited honey and bee appliances.

GARDENING APPOINTMENTS.

Mr. W. C. Davis, late gardener to Ernest Stevens, Esq., J.P., at Prescot House, Stourbridge (14 years), and previously occupying a similar position with the late Sir Andrew Fairbairn, Bt., at Askham Grange, Askham Richard, York, as gardener to Philip Lyle, Esq., Wancote, Compton, Guildford, Surrey.

Mr. Sidney Bourne, for the past two years and six months second gardener to H. Gurney Aggs, Esq., Pippbrook House, Dorking, Surrey, as gardener to G. Dutton, Esq., Netherfield House, Weybridge, Surrey. (Thanks for 2s. for R.G.O.F. Box.—Eds.)

SCHEDULES RECEIVED.

Sheffield Chrysanthemum Society.—Thirty-seventh exhibition to be held in the Artillery Drill Hall on Thursday, Friday, and Saturday, November 13th, 14th, and 15th.—Secretary, Mr. F. B. Hyde, 42, City Road, Sheffield.

Holland (Lincs.) County Potato Show, to be held in Holland's Garage, Tawney Street, Boston, on Thursday, October 23rd.—Secretary, Mr. J. C. Wallace, Agricultural Institute, Kirton.

ENQUIRY.

I have been recommended to use peat moss or peat moss manure, leaf-mould, and loam in equal parts for the cultivation of Violets, Violas and Azaleas. Leaf mould I know to be good for them, but I am doubtful about the peat moss and should be glad to hear the opinions of other growers concerning its use for the plants named. H.W.J.

Obituary.

Mr. James Dunn passed away on Thursday of last week after a long illness at Burton Closes Gardens, Bakewell, Derbyshire. Mr. J. Dunn, who was one of the best known horticulturists in a wide area, was 77 years of age, and leaves two sons and two daughters. He had resided in Bakewell for very many years, but took little interest in public affairs. A native of Dunscore, Dumfriesshire, Mr. Dunn began his gardening career at "The Grove," Irongray, and afterwards served as journeyman at Capenock, Dumfriesshire, and was later at Crow Nest, Thornhill, Yorkshire, the residence of the late Sir Titus Salt. In 1875 he was appointed gardener to the late Colonel Trench Gascoygne, at Parkington Hall, Yorkshire, and acted as such until 1893. In February of that year he came to Burton Closes, Bakewell, the residence of the late Mr. Smith Taylor Whitehead, D.L., who died in 1895, and was succeeded by his son, the late Mr. George Taylor Whitehead. Mr. Dunn continued to serve as gardener at Burton Closes to Mr. A. Campbell Blair, on the latter acquiring the estate in 1902. In former years Mr. Dunn contributed articles to *The Gardeners' Chronicle* and other journals. In February, 1922, Mr. Dunn was accidentally knocked down by a cyclist while on his way to Youlgreave, near Bakewell, and sustained severe injuries from which he did not fully recover.

ANSWERS TO CORRESPONDENTS.

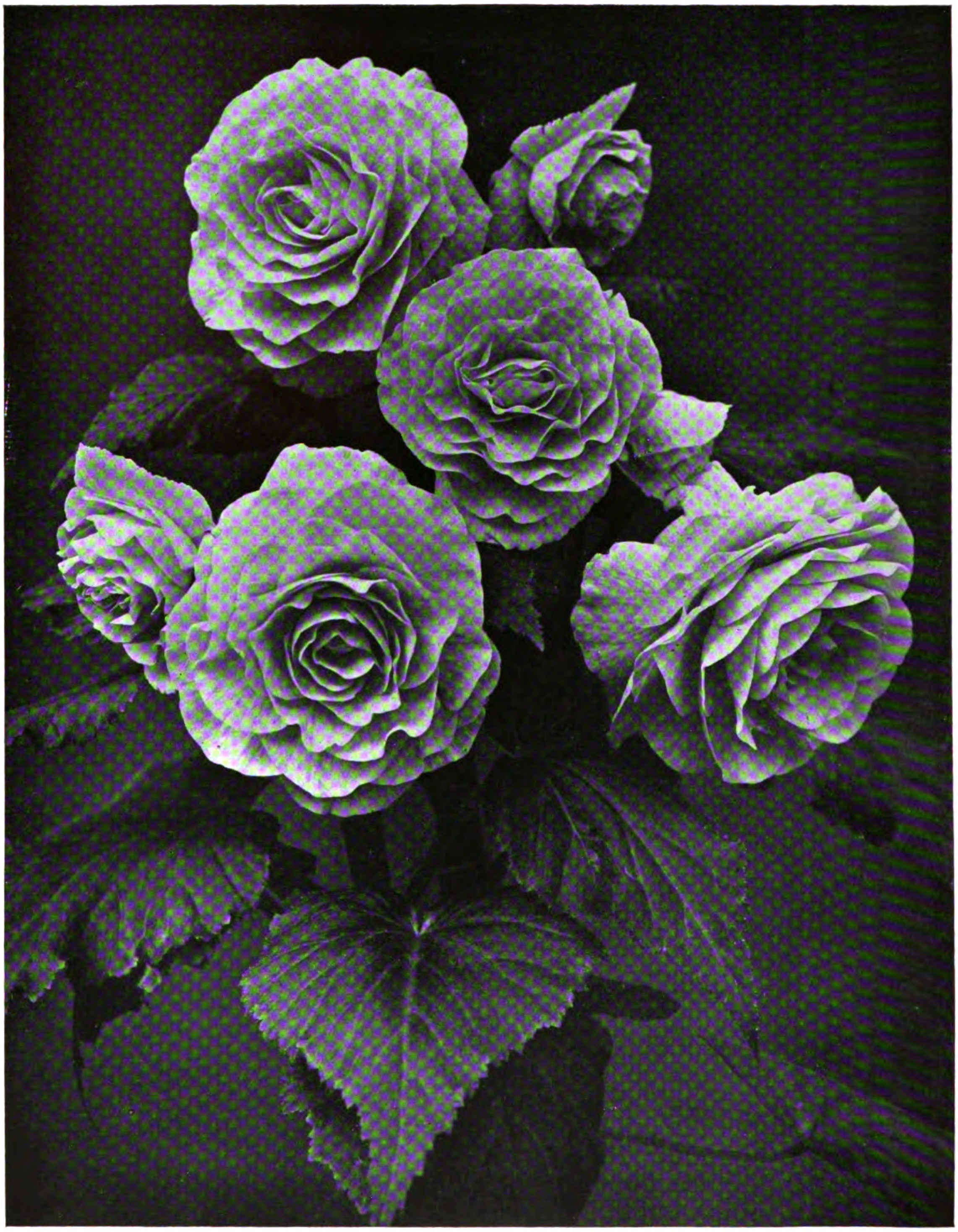
Brick Pond and Water Lilies: *E. W. H.* Rain provides about the cleanest water obtainable in a state of nature, and in a brick tank this might be expected to keep clean; but we have seen many tanks, ponds, etc., keep wonderfully clean even when the banks consisted of soil and the bottom contained mud. Some of the ponds were filled by natural, small streams, springs, and even from companies' water. Where the ponds are large or well exposed the motion caused by wind keeps the water clear, even when Duckweed (Lemna) is present, because the wind causes the tiny plants to get stranded on the banks. We have also seen ponds that were deep, still and sheltered, look quite pleasing by being occupied with Water Lilies. Green leaves alone break up the monotony and dullness of glassy looking and still water, so that it would be well worth the experiment of planting Water Lilies in the objectionable, brick-built pond.

Clematis Failing: *H.* You could cut the Clematis down and see whether it will grow satisfactorily again, but we think it would save time to root it clean out and plant a young, vigorous plant in fresh soil.

Flowering Shrubs for Calcareous Soil: *A. C. W.* You can grow practically any good flowering shrubs on the soil you mention, with the exception of Rhododendrons, Azaleas, Heaths, and any other peat-loving plants, which will not thrive in ground containing any appreciable quantity of lime.

Names of Fruit: *J. S.* The Plums had suffered so badly during transit that it was not possible to identify the varieties. *C. S.* 1, Domino; 3, Worcester Pearmain; 4, Castle Major; 6, Peasgood's Nonesuch; 7, Devonshire Quarrenden. *F. W. D.* 1, Lemon Pippin; 2, Irish Peach; 3, Red Joaneting.

Communications Received.—Reader.—F. A. R.—M. H.—W. J. M.—W. S.—J. P.—S. A.—G. S.—W. and B.—J. C.—J. E. K.



BEGONIA LADY ANN.

THE Gardeners' Chronicle

No. 1973—SATURDAY, OCTOBER 18, 1924.

CONTENTS.

Alpine Garden—
  Saxifraga Irvingii ... 267
  Verbena venosa ... 267
Ashton, Mr. Ben ... 260
Begonia Lady Ann ... 259
Bird sanctuaries in Glasgow Parks ... 259
Books, notices of—
  Seven Thousand Dahlias in Cultivation 266
Bulb Garden—
  Nerine Bowdenii ... 267
Cedar, pencil 260
Florists' flowers—
  Select Sweet Peas ... 263
Fruit crops, remarks on the condition of the 270
Fruit garden, the market 270
Garden craft in the Canticles 268
"Gardeners' Chronicle" seventy-five years ago 260
Gardeners' Royal Benevolent Institution ... 260
Hardy flower border—
  Viola Saughton Blue 271
Hardy fruit garden—
  Canker in Apricots ... 271
  The Veitchberry ... 271
Hops in England, an endemic Peronospora on the 265
Horticulture at the British Empire Exhibition 266
Indoor Plants—
  Alocasias 269
Nursery Notes—
  W. Wells, Jnr. ... 265
Obituary—
  Hemsley, Dr. Botting 275
  Britten, James ... 275
Oxalis obliqua 272
Plants New or Noteworthy—
  Clerodendron ugandense 268
Potato tuber, heavy yield from a single ... 260
Rhododendrons 264
Rose garden, the—
  Perpetual - blooming Roses for light soils 266
Royal Horticultural Society's Hall, the proposed 272
Seeds, the germinating power of 269
Societies—
  Glasgow and West of Scotland Hort. ... 273
  Orchid Club 274
  National Chrysanthemum 275
  Northern Counties Fruit Show and Congress 274
  Reading and District Gardeners 273
  Royal Horticultural 272
Trees and Shrubs—
  Clematis Rehderiana and allied species... 261
Vegetable Garden—
  Potato Sharpe's Express 270
Week's Work, the ... 262

ILLUSTRATIONS.

Ashton, Mr. Ben, portrait of 261
Chrysanthemum Reginald A. Roots 263
Clerodendron ugandense 269
Grape Cote House Seedling 272
Primula siamensis 261
Saxifraga Irvingii 267

SUPPLEMENTARY PLATE.

Begonia Lady Ann.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 47·7.

ACTUAL TEMPERATURE:—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 15, 10 a.m: Bar. 30·4: temp. 61°. Weather, fine.

Pruning. EVERYONE interested in the art of training fruit trees will welcome efforts made to inculcate the principles on which the art is based. For it is sad to reflect that gardeners—both professional and amateur—are, as judged from the results which are generally manifest in gardens, less interested in the refinements of pruning than were their forbears. Few, indeed, are the gardens where the young, trained trees bid fair to vie with the old, trained trees in shapely symmetry. Yet nothing whatsoever gives a garden such an air of having overcome the disorderliness of nature as does a fruit quarter where all the trees, be they standard, half-standard, espalier, horizontal, fan-trained, or cordon, are of perfect shape. Nor is it to be wondered at that in these days, with their wealth of variety of garden subjects, less attention can be given to the training of fruit trees than was bestowed in more leisured times. We welcome, therefore, the leaflet on pruning issued by the Hertfordshire Institute of Agriculture.[*] Its object appears to be to impart first principles and in this respect it achieves success. We think, however, that in providing instruction it is essential to state for whom it is intended. Pruning in commercial orchards is one thing and quite another in the garden. For example, it is no doubt true, as the leaflet suggests, that summer pruning can be but little practised in the majority of large orchards; but in the garden to omit this most powerful means of directing and controlling growth and inducing fruitfulness is to lose valuable space and time. Nor, for our part, do we think that the advantage of summer pruning lies chiefly in the admission of light and air. It is in our view a potent means of inducing fruitfulness and of providing a sufficiency of spurs. The leaflet advises summer pruning to five leaves. Yet another advantage of summer pruning lies in the fact that natural growth may be corrected more easily then than at any other time; particularly in the cases—only too common—of trees which have been neglected in previous years. No one who having once formed in his mind a definite idea of the shape which an Apple or Pear tree is to be made to assume will fail to experience abundance of satisfaction as year by year the idea takes shape under his directing hand. To the young pruner we would say begin with Pears. They have a stronger habit of orderly growth than the more wayward Apple. Begin with a tree to be trained as a bush and make it of basin-shaped form, each bunch of which is, like a cordon, covered with spurs and incipient spurs right up to the current year's growth. Summer pruning and spur pruning will correct any little vagaries which it may develop and when the tree is trained there will be one more good gardener in the making; for the experience gained in the fruit quarters will be found invaluable in the garden of flowering shrubs. The object here is somewhat different, it is true, less constraint and regularity, but nevertheless ultimately the same to secure floriferousness and to enable the specimen to expand into natural symmetry. Nor are these views inconsistent with this other that we would urge—the less pruning the better. As the pamphlet already referred to points out, the hedger slashes the hedgerow to make a dense thicket. The fruit tree must never, need it be said, be treated in that drastic manner and the more impetuous its growth the gentler must be the handling it receives; mettlesome boys and trees must be driven with the lightest of hands. With the improved stocks now available pruning is made easier and the bad habit, so often manifested, of pruning for space, to make a big thing fit a little place, is now inexcusable. By choosing the trees to be grown and ensuring that the stock is suitable the art of pruning becomes easy, provided that a keen eye and a sense of form are owned by the pruner. Those who wish to learn the finer points cannot do better than obtain the leaflets on pruning published by the Ministry of Agriculture, which deal not only with pruning in general, but with the idiosyncracies of the chief varieties of Apples and Plums.

Our Supplementary Plate.—The subject of the Supplementary illustration published with the present issue is the beautiful tuberous-rooted Begonia named Lady Ann, which received an Award of Merit when shown by Messrs. Blackmore and Langdon at the meeting of the Royal Horticultural Society on July 8 last. As may be seen on reference to the plate, the plant was a well proportioned specimen, carrying several beautiful flowers, each some nine inches across and of a delicate shell-pink shade. Our illustration of the specimen is much reduced, for this fine Begonia was some two-and-a-half feet tall; we congratulate Messrs. Blackmore and Langdon on the success with which they cultivate these glorious Begonias as well as on the distinctions they have gained for the many fine novelties they have raised. The tuberous-rooting Begonias have some of the most delicate tints of all flowers and they are useful not only for indoor cultivation, but equally valuable for the flower beds in summer.

A New Rose for Banks.—*Horticulture*, the publication issued by the Massachusetts Horticultural Society, October 1, states that the Max Graf Rose possesses unusual value for growing on banks and trailing over rocks. The variety is said to make fairly rapid growth, nestles closely to the ground and has attractive foliage. The flowers, which are single, are deep pink in colour and much resemble those of the common wild Rose. The plant is said to be almost evergreen, except in the very coldest districts.

A Year of Weeds.—Gardeners in all parts of the country have been troubled this year with unusually bountiful crops of weeds that have been almost impossible to keep under, even where the staff is up to the normal in number. Some of the more troublesome weeds, such as Ragwort, Spear Thistle, Creeping Thistle, Curled Dock and Broad-leaved Dock, are maturing abundant crops of seeds which will give further trouble unless measures are taken to cut the stems down and burn them, together with the seeds. Not all gardeners are aware that there is a special Act dealing with the failure to cut down and destroy the injurious weeds specified, but notice may be served by the County Agricultural Committee under the Corn Production Acts (Repeal) Act, 1921, and unreasonable failure to comply with such a notice is punishable on summary conviction by a fine not exceeding £20. and to a further fine not exceeding 20s for each day during which default continues after conviction. Weedy roadsides are often a great source of infection to gardens and the authority by whom the road is being maintained comes under the category of occupier, and in the case of unoccupied land the person entitled to the occupation thereof is held responsible. Doubtless there are gardeners in certain districts who will be pleased to know that a copy of this notice may be sent by the authorities to their unthrifty and careless neighbours.

Bird Sanctuaries in Glasgow Parks.—The establishment of bird sanctuaries in six of the public parks of Glasgow has been recommended by a special sub-committee of the Corporation Parks Committee. Nesting boxes are to be provided, and food will be supplied to the birds in winter.

Appointment.—Mr. Henry Horatio Dixon, D.Sc., F.R.S., Professor of Botany in Dublin University, has been appointed Regius Professor of Botany in the University of Glasgow, in succession to Professor Bower, who has resigned.

Forestry Commission.—The Forestry Commission proposes to plant 9,700 additional acres with trees, and of this area some 1,000 acres are situated on the Crown lands transferred to the Commission and the remainder on lands acquired by them under the Act of 1919. In addition to this scheme of planting, the Commission is offering £3 an acre to landowners for each acre they plant, on the condition that at least the amount of the grant is expended on wages to men unemployed at the date of their engagement, and that 75 per cent. of the unemployed so engaged must consist of ex-service men, if available. A considerable amount of planting is to be done in Wales; 200 acres added to the forests of Rheola and Margam, 300 acres at Chepstow, 200 acres at Llanover, 345 acres at Kerry, 250 acres at Myherin Valley, 122 acres at Vaughan, 184 acres at Gwyder, and 87 acres at Llantrisant. The trees will consist principally of Conifers, including Larch and Spruce. It is expected that the scheme will provide employment for local labour until March or April.

---

[*] *Pruning.* Horticultural Leaflet No. 5. Hertfordshire Institute of Agriculture, Oaklands, St. Albans.

Dahlia Show in California.—We learn from one of our American contemporaries that the Dahlia Society of California held its annual exhibition at the Palace Hotel, San Francisco, on September 4, 5, and 6. This was considered to be the best show yet held by the Society and, including both amateur and professional exhibits, no fewer than 300,000 Dahlia blooms were shown, while the number of varieties is estimated at 3,000. A notable feature of this American show was the large number of lady exhibitors.

Gardeners' Royal Benevolent Institution.—The only charity of its kind in the United Kingdom and entirely unsectarian, the Gardeners' Royal Benevolent Institution is now providing annuities for life to no fewer than two-hundred-and-fifty indigent persons. Thirty-five candidates who are receiving grants in aid are on the waiting list, and some of these are incurably paralysed, blind, or otherwise disabled. The charity provides permanent relief to those elected to its benefits and those qualified to receive such relief are aged and distressed gardeners, market gardeners, growers, nurserymen, seedsmen, and others formerly engaged in horticultural pursuits, or the necessitous widows of such. The assured income of the charity does not exceed £1,000, consequently liberal donations and annual subscriptions are needed to enable the Committee to merely fulfil its obligations, let alone extend them. The Annual Festival Dinner is an occasion upon which many horticulturists extend liberal support to this charity, and the Committee and stewards are looking with considerable optimism to the forthcoming Festival as a means whereby the usefulness of the Institution may be extended. His Royal Highness The Prince of Wales has graciously promised to preside at the seventy-ninth annual festival which is to be held on Tuesday, November 25, at the Guildhall, City, E.C. It is the hope of all interested in the charity that this occasion may be made worthy of the royal chairman and result in a record subscription list. We are well aware that stewards are urging the claims of the charity among their friends, and we have no desire to trespass on their preserves. We feel sure, however, that many of our readers, not otherwise directly appealed to, would like to show their practical interest in the Institution on this auspicious occasion by contributing to such a deserving cause. To all such we now appeal, especially to professional gardeners, and we will gladly acknowledge the receipt of donations, small or large, which charitably disposed readers may send us. Cheques and postal orders should be crossed and made payable either to The Gardeners' Royal Benevolent Institution or to Charles H. Curtis (Steward), *The Gardeners' Chronicle Office*, 5, Tavistock Street, Covent Garden, W.C. 2.

The Potato Crop.—The estimated yield of the Potato crop in England and Wales is 2,648,000 tons, compared with 2,758,000 tons in 1923. The area grown this year was reduced from 467,000 acres in the preceding year to 452,000 acres. In the Potato-growing districts of the east of England the tubers have not suffered much from the rains of the past several weeks, and disease is not very prevalent, but there is a considerable amount of blight in Wales, and on the wetter lands some of the tubers have rotted. The average yield is estimated at 5·9 tons per acre, the same as last year. The prices of this year's crop is satisfactory.

Mr. Ben Ashton.—Few gardeners are better known in the north midlands and in Lancashire than Mr. Ben Ashton, who, while gardener to the Earl of Lathom, became famous as an exhibitor of fruits and vegetables and was particularly successful as a grower and exhibitor of Potatos. Mr. Ashton commenced his gardening career in the gardens of Babworth Rectory, near Retford, and eventually served in various capacities at Ponton Hall, Grantham; Nocton Hall, near Lincoln; Carlton House, Worksop; Ashburnham Place, Battle; Pye Nest Park, Halifax; Vale Royal, Northwich; and Thurcroft Hall, near Rotherham. In 1881 he was appointed gardener and estate manager to Selina, Viscountess Milton, who died after he had been there two years, but he remained in charge of the gardens for two years longer under her son, the late Earl of Liverpool. In 1885 Mr. Ashton became gardener to Lord Howard of Glossop, at Glossop Hall, where he carried out extensive alterations and improvements. He remained there for about eleven years and then became gardener to the Earl of Lathom, Lathom House, Ormskirk, where he also carried out many improvements and received ample encouragement from his noble employer. It was while at Lathom House Mr. Ashton made a great name for himself as an exhibitor at the leading shows throughout the country. One of his greatest successes was that of exhibiting Potatos and for three years in succession he won the fifty-guinea challenge cup offered by Messrs. James Carter and Co. and Mr. A. Findlay at the National Potato Society's exhibitions, and with the same exhibits he won the challenge cup offered by Sir John Llewelyn (open to all) for the best Potato exhibit at the show. This cup should have been won three times, but as the National Potato Society ceased to function and Mr. Ashton had won the cup twice, Sir John Llewelyn agreed that he should retain it. Mr. Ashton is very proud of the fact that he was an exhibitor at the last show held by the Royal Horticultural Society in its old gardens at Chiswick and on that occasion he won the Williams Memorial Medal for twelve dishes of Potatos. While at Lathom he also won two gold medals at the combined shows of the Royal Lancashire and Preston and Fulwood Societies in 1902; one as the principal prize winner in the fruit classes and one as the principal prize winner in the vegetable section. A little later, at the Royal Lancashire Agricultural Society's exhibition at Manchester, Mr. Ashton won two silver cups as premier prize winner in both fruit and vegetable sections. It was while Lord Lathom was president of the Royal Lancashire Agricultural Society that an exhibition was held at Southport and Lord Lathom requested Mr. Ashton to put up a non-competitive exhibit of plants. This occupied four hundred square feet and was unanimously awarded a large gold medal. These, however, are but a few of the awards that Mr. Ashton has won. After serving under three Earls of Lathom, extending over a period of twenty-three years, he left the Lathom gardens owing to great alterations in the estate, and took charge of the rock garden at Leighton Court, Neston, Cheshire, and during the first year of his charge here he propagated and planted nearly 20,000 alpine plants. After he had been at Leighton Court about six months the gardener died, and W. E. Whineray, Esq., asked Mr. Ashton to take entire charge of the gardens. He accepted the position and eventually Leighton Court became one of the best kept gardens in Cheshire. Mr. Whineray was passionately fond of his garden, and all horticulturists regretted his early demise which took place somewhat suddenly in New York. Leighton Court was sold early in 1924, and Mr. Ashton then took charge of the gardens at Viewlands, Wightwick, Wolverhampton. Mr. Ashton is not only an extremely capable gardener and unusually successful competitor, but he is a capital lecturer and acted in that capacity for over twenty years on behalf of the Lancashire County Council. As a judge Mr. Ashton's services are continually in request, and he is usually to be seen at the principal horticultural exhibitions throughout the country.

MR. BEN ASHTON.

Pencil Cedar.—The brown, soft, aromatic wood used in pencil making is derived from Juniperus virginiana, and it is interesting to note from the *Journal of the Royal Society of Arts* that Kenya Colony has considerable timber of an allied species, Juniperus procera, known locally as "mutarawka." The tree is found in the highland forests of the district and the timber is shipped from Mombasa. It is described as a handsome reddish-brown, soft wood, with fine, even grain which saws, planes, and works up well. It is rather brittle, very fissile and, like the original pencil Cedar, aromatic; it also possesses in a high degree the quality of whittling well. It is estimated that sufficient supplies will be available to maintain a considerable export in pencil slats until re-afforestation is ready for exploitation.

Heavy Yield from a Single Potato Tuber.—Messrs. Bruce and Robbie, Ltd., Potato Merchants, Forfar, inform us that they are exhibiting in their window the produce of a single uncut Potato tuber weighing fifteen pounds, the number of tubers formed being no fewer than forty two. The variety is Claymore, which, we understand, was raised at the Glamis Castle Gardens, and the exhibited specimens were grown by Mr. James Whyte, Junr., Upper Hayston, Glamis.

Appointments for the Ensuing Week.—Monday, October 20: National Chrysanthemum Society's Floral Committee meets. Tuesday, October 21: Royal Horticultural Society's Committees meet; Croydon and District Horticultural Society's meeting; Winchester Horticultural Society's lecture. Wednesday, October 22: Sheffield Chrysanthemum Society's meeting; Wimbledon Gardeners' Mutual Improvement Society's meeting. Thursday, October 23: Holland (Lincs.) County Potato show; Royal Botanic Society's meeting. Friday, October 24: Imperial Fruit Show at Bingley Hall, Birmingham (nine days).

"Gardeners' Chronicle" Seventy-five Years Ago.—*Brunsvigia Josephinae.*—In March, 1844, I received three fine bulbs, among various others, of Brunsvigia Josephinae from the Cape. They were at once potted in good fresh, turfy loam, and in a month the leaves appeared. They did not, however, grow finely, and in November, beginning to turn yellow, water was withheld, but resumed in December, new leaves again showing themselves. The pots were also plunged in water for a few hours to ensure the ball of earth being fully saturated; the top mould was also taken off and replaced with leaf mould. During the winter they were kept in a warm greenhouse, in a temperature often down as low as 35°, and making leaf well. In May they were placed in a pit, kept dry and exposed to the sun, the lights being kept closed. In the September ensuing one of the bulbs flowered, and the treatment being precisely similar, another flowered in 1846. The first again flowered in 1847, and the second in 1848, appearing thus to require a year to recover their exhausted strength. This year forms, however, an exception, all three being now in flower, one of which is that now exhibited, and although at first the largest bulb, and always producing the finest foliage, is blooming only for the first time. I cut the flower stem always off as soon as the last flower begins to wither, in order that strength may not be exhausted in perfecting seed, and then I place the pots out of doors and keep them there as late into the autumn as possible, and until the leaves are grown so long as to make them liable to injury from strong winds or heavy rain. I have only further to add that these bulbs have never been repotted since I first planted them, but that liquid manure is occasionally given them when the leaves are approaching and have attained maturity. under similar treatment I have twice bloomed the Buphane ciliaris, and last year I had also two or three other Brunsvigias in flower. There is, therefore, not so much difficulty in blooming these plants as had hitherto been thought. *Chas. Leach in the Journal of the Horticultural Society of London. Gard. Chron., October 20, 1849.*

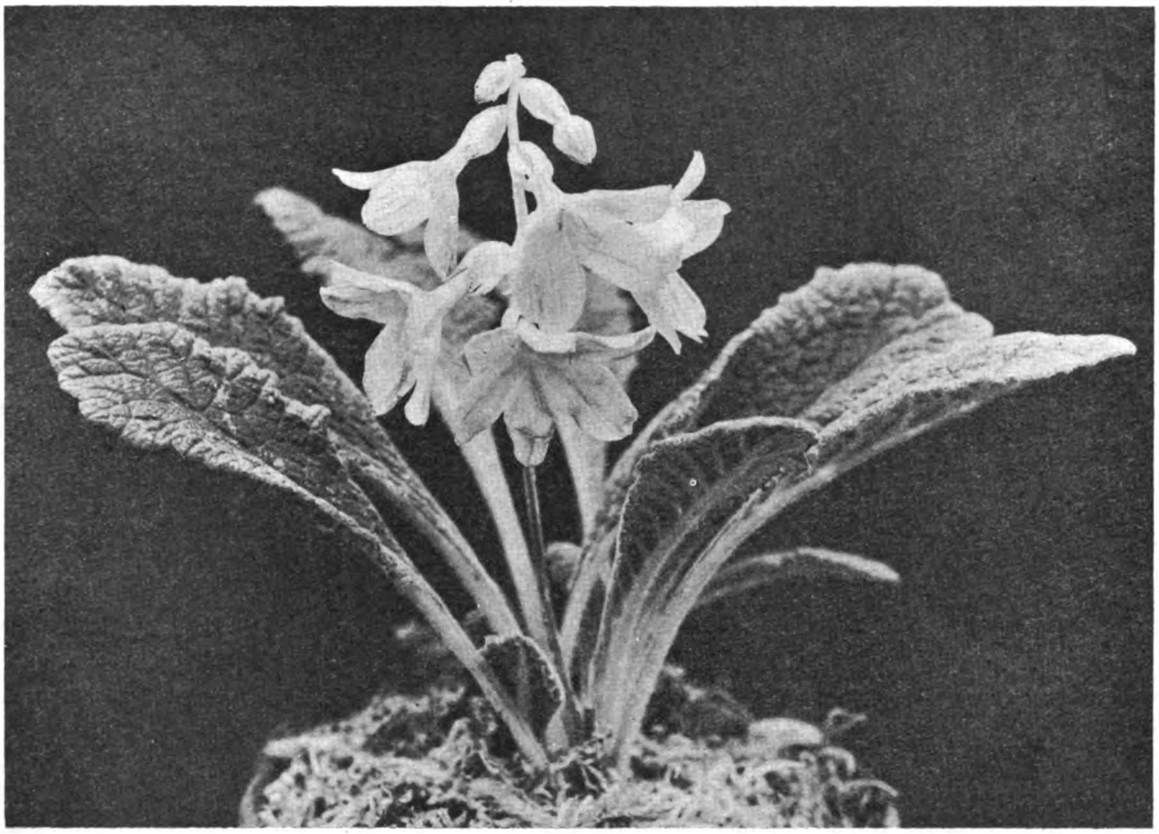


FIG. 94.—PRIMULA SIAMENSIS.

R.H.S. Award of Merit, October 7; flowers lavender and white (see p. 255).

TREES AND SHRUBS.

CLEMATIS REHDERIANA AND ALLIED SPECIES.

To those whose tastes lie in the direction of uncommon and attractive hardy climbing shrubs, the genus Clematis provides a few interesting species which flower in the autumn and which readily lend themselves to the covering of tree trunks, tripods, walls, or fences. Apart from the charming C. tangutica and others, there are three or four interesting species which belong to the Connatae section of this large Order and in themselves are a very valuable acquisition to any collection. Indeed, the three species, viz. C. connata, C. Rehderiana and C. Veitchiana with which this note deals, are so closely allied that unless one is interested in minor botanical differences there is, for purely garden decoration, no merit in one more than the other. All are of very free growth and deciduous. The flowers are tubular and hang in loose panicles of six or nine flowers with the four segments slightly recurved. They are creamy-yellow in colour and all are fragrant.

Of these three, C. Rehderiana and C. Veitchiana bear the closest resemblance to one another. Each is a native of Western China, the former being introduced into this country in 1904 and later by Wilson in 1908, and C. Veitchiana, which was also collected by Wilson, in 1904. There has been a great deal of confusion between the two species, and C. Rehderiana has also been described under the names of C. nutans, C. n. thyrsoides, and C. Buchaniana. The flowers are slightly smaller in C. Veitchiana, otherwise the two could not, except to the trained botanist, be recognised apart. C. connata is more distinct; the flowers are paler in colour and the petals are fugacious, whereas in the foregoing species the petals do not drop, but wither naturally upon the plant, displaying in due course the silvery awns. Again with C. connata the bunch of long stamens is daintily gathered tightly around the stigmas, and so soon as the petals fall, expand and shed themselves, giving away in turn to the attractive silvery tails of the achenes, which are longer than those of either C. Rehderiana or C. Veitchiana. C. connata is a native of the Himalayas.

C. nutans is another species of this group and is described and figured in *The Gardeners' Chronicle*, Vol. XLVIII, p. 310. The specimen illustrated is growing in Aldenham House Gardens, Elstree, and Mr. E. Beckett, the writer of the note, speaks very highly of the distinctive beauty of this species, which, he states, was introduced by Wilson from China. It seems probable, however, that this plant is the C. n. thrysoides of Rehder and Wilson or C. Rehderiana of Craib, for no mention is made of it in *Plantae Wilsonianae* beyond a cursory note that they (Wilson and Rehder) have seen no specimens from China referable to C. nutans. Perhaps Mr. Beckett would inform us if he still possesses this plant, and if it is the true C. nutans. *B.*

ORNAMENTAL CRAB JOHN DOWNIE.

THE ornamental Crab John Downie, although now many years introduced, still holds its own among the host of flowering and fruiting trees of many genera, species, and varieties which have come my way since it was first raised. I have seen it very fine in a few gardens, and there its clusters of bright orange scarlet fruits have been most ornamental. Its value does not end there, for the fruits are excellent for preserving purposes and good for dessert, while, as flowering trees go, Crab John Downie stands high in point of beauty. *S. A.*

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Miltonia.—Such Brazilian Miltonias as M. Regnelli, M. spectabilis and its variety Moreliana, are interesting members of this genus, and produce their flowers during late summer and early autumn. As they pass out of bloom the plants should be kept rather dry at the roots, just sufficient water being afforded to prevent any shrivelling of the pseudo-bulbs. M. Clowesii and M. candida are developing their flower spikes, and as they pass the flowering stage should receive similar treatment. These plants are very subject to attacks of red spider, especially at the present season; as a precaution against this pest the leaves should be sponged frequently with a solution of soft soap and tepid water. M. Roezlii, with any of the late flowering plants of M. vexillaria and its hybrids, may still be repotted. Any plants that have been cultivated in the cool house during the summer should now be removed to an intermediate house and placed in a light, airy position. During damp, dull weather the immediate surroundings of the plants should not be kept too moist.

Cypripedium.—Specimens now pushing up their flower spikes should be cleansed and the blooms tied neatly to stakes so soon as they attain sufficient length.

Sophronitis grandiflora.—This dwarf, bright-flowered species thrives well in the cool house, and the plants should be elevated to expose them fully to the sunlight. Many beautiful hybrids are being obtained through crossing this species with Cattleyas and Laelias and many of their hybrids, most of them possessing very rich colourings and they produce their flowers at this season. These hybrids succeed best when grown in an intermediate temperature.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Bedding Plants.—With the advent of frosts the dismantling of the summer bedding scheme will call for attention. Climatic conditions have caused growth generally to be tender and sappy, and the plants will not be able to resist even slight frosts. Where standards and large plants of such subjects as Fuchsias, Pelargoniums, Heliotropes, Plumbagos, etc., are needed for next year's display, the lifting of them should not be longer delayed. They should be put into pots of as small a size as will just accommodate the roots, and placed in a cool house, where they will receive attention. Various other plants will also need lifting and storing for the winter. Lobelia cardinalis and its varieties should be cut back, the clumps lifted from the beds, placed in boxes of good, light compost, and stood in an airy house until the spring. Salvia patens should also be lifted and the tubers stood in leaf-mould in a frost-free structure until wanted for propagation in the spring. Tuberous-rooted Begonias should be lifted carefully with a quantity of soil adhering to their roots, and placed in a frame where the tubers will ripen gradually. When the foliage has withered the tubers may be cleaned and placed in boxes with a little leaf-mould. Cannas should be lifted before they become injured by frost, but they should not be deprived of foliage immediately or the crowns will be considerably weakened. They are best stood in a deep, frost-free pit where the foliage can ripen gradually.

Lawns.—These will soon be receiving their last mowing of the season, and it should be done if possible when the grass is dry. After the final mowing any necessary returfing should be proceeded with; where the surface is uneven it should be remedied by lifting the turf and making up the soil underneath to the required level. When the whole has been perfectly levelled relay the turf and beat it thoroughly. Opportunity should be taken of the period during which the mowers are not in use for top-dressing the lawns. The compost for this may be made up largely of clean leaf-mould or other decayed vegetable matter, which should be reduced to a fine state of division and applied after cultivating the surface. The lawns should be swept frequently and kept free from fallen leaves, as deterioration of the grass is rapid when covered with leaves. On light, sandy soils, in particular, grasses often become partially starved through lack of potash, and the application of kainit at the rate of five cwt. per acre is a cheap and efficacious way of restoring this important element. It is essential, however, that it should be applied during the autumn.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Chrysanthemums.—Many of the earliest varieties are in full flower, but others of the mid-season and late sections will require attention in the matter of disbudding. Amongt those which are grown for cut flowers or for the furnishing of rooms, most of the so-called decorative Japanese and all of the incurved type will be the better for disbudding, either partially or severely, according to the character of the variety. Some of the large-flowered singles also prove more useful when disbudded. In the case of plants which are being grown for the production of large blooms, and on which the flower buds are now swelling freely, it will be necessary to tie out the growths of the plants so that each flower may have sufficient room to develop properly. Disappointment and loss may be prevented if the growths are made secure and not allowed to sway about. Each shoot bearing a flower bud should be securely attached to a thin stick which should be tied to the peduncle close up under the flower bud. As the flowers develop less air will be required, but a close atmosphere must be guarded against. Keep the top and front ventilators of the house open night and day, more or less, according to the outside weather conditions. During damp and foggy weather the water pipes should be kept sufficiently warm to keep the air of the house moving and to dispel damp. Watering should be completed in the forenoon. Great care must be exercised in applying stimulants at the roots. It is undoubtedly true that many Chrysanthemum flowers are spoiled through overfeeding after the plants are housed, nevertheless, to produce exhibition blooms of a high standard feeding of the plants is absolutely necessary, and it may be continued until the flowers are three parts open. Discretion must be used, however, in treating the different varieties, having in mind the possibility of "damping" of the florets. The yellows and whites are less prone to "damp," but when dealing with the pink, bronze and dark varieties, although gentle feeding is necessary to obtain good colour in the flowers, it is well to remember that they are more likely to suffer from "damping" as an effect of feeding. Strong doses should be avoided and liquid manure should never be applied to a very dry plant until it has first received a supply of clear water.

Euphorbia pulcherrima, Poinsettia and Plumbago.—As Euphorbia jacquiniaeflora, Poinsettias, and Plumbago rosea become established in their flowering pots they should be given light applications of liquid manure, which should be placed in the house in which the plants are growing some twenty-four hours before use. A temperature of 60° to 65° should be afforded Euphorbias, whilst 55° will be warm enough for the Plumbago. If subjected to a high temperature the last mentioned suffers loss of colour in the flowers.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Strawberries.—Owing, doubtless, to the mild, damp autumn, newly planted Strawberries are growing nicely, and the ground about them should be kept clean by hoeing. Weeds have never been more troublesome than they are this year, and recourse to hand weeding has had to be taken. So far, the ground has been too wet to permit of the use of the Dutch hoe, but advantage should be taken of fine days to use this tool as much as possible, for nothing conduces to good growth at this season more than keeping the surface-soil well stirred. A mulching of well-decayed manure should be applied to the beds at any time now. The rains and snows of winter will wash the nutriment down to the roots, and the litter will also act as a protection if hard weather prevails. Permanent beds should also be made tidy and all dead leaves cut off the plants. Dust old soot between the rows, and mulch the soil with manure.

Raspberries.—As soon as the young canes are all tied in and the spaces between the rows cleaned, Raspberries should be given a liberal mulching of manure, as they are gross feeders. Raspberries should always be hand-weeded, as the roots are close to the surface, and digging or hoeing the soil should be avoided as much as possible. Strong suckers growing from the base of the canes should be dug up and used to increase the stock, if desired, otherwise they may be dispensed with, as there is nothing gained by leaving too many canes. The same remarks apply to Loganberries and allied fruits, which should all be attended to as soon as possible after the fruits are all gathered.

Late Plums.—The fruits of such varieties as Coe's Golden Drop and Late Orange should be allowed to hang on the trees for so long as possible, and, given fine weather, the flavour will become very rich and the fruits sugary. The former variety will often hang right into November. Plums should always be left on the trees until they are ripe, as they do not mature and develop rich flavour after they are gathered.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

The Cool Orchard House.—Trees planted out in borders in the cool orchard house, such as Cherries, Plums, and Pears, that require lifting or root-pruning may be attended to forthwith. The roots, which are still active, will soon grow into the new compost. Where the roots of the trees have access to both inside and outside borders, it will be sufficient for the present time to work under the trees from the outside. Commence the work by taking out a deep trench about four feet from the bole of the tree and gradually work the soil back with a four-tined fork, taking every possible care of all fibrous roots. It is important to get well under the ball of the tree, for here, possibly, will be found the cause of the trouble. The roots that are found penetrating into uncongenial soil should be severed with a sharp knife; this will cause them to produce new fibrous roots. The work should be carried out in the shortest possible time, and every care should be taken to preserve all fibrous roots. If new compost s needed it should be prepared in advance in sufficient quantities to meet the demand so that the work of root-pruning may be proceeded with without delay. If the same soil is to be returned it will be advisable to add some old lime rubble, broken charcoal, wood ash, and bone meal to it, but no manures in any form should be used. Before any roots are placed in position the trench should be filled in to within five inches of the surface and made firm by treading, when the roots should be spread out evenly in layers as the work of filling in is proceeded with.

Fruit Trees in Pots.—As soon as the fruits are taken from pot-grown Apples, Pears and Plums, the trees should be overhauled and repotted if necessary. Should they only require top-dressing, the drainage should be examined and if found to be faulty it should be corrected and made good before this work is carried out. The compost used for top dressing may be enriched with a concentrated fruit-tree manure which will help to build up the fruit buds that will produce next season's crop.

THE KITCHEN GARDEN.

By WALTER Y. STAWARD, Gardener to Mrs. JOHN FEENEY, The Moat, Berkswell, Warwickshire.

French Beans.—Where Dwarf Beans are grown in frames and heat can be applied, the crop will develop quickly. French Beans suffer from damp when the temperature falls too low. Applications of liquid manure will help to swell the pods. Admit sufficient air on all favourable occasions, and close the frames early in the afternoon.

Rhubarb.—Where the foliage has died down clumps for forcing should be lifted in readiness for placing in the forcing house. Select sound, healthy crowns, and when they are placed in the forcing house work plenty of leaves round the roots.

Chicory.—Roots for forcing may be lifted now. Cut away the top growth and insert the roots in beds or boxes containing light, sandy soil; they will soon break into fresh growth if forced in warmth and darkness. Keep the atmosphere moist but water the roots carefully, using tepid water.

Beetroot.—If Beetroot is still in the ground it should be lifted, the roots cleaned and stored in ashes or sand, for if left too long in the ground they will get excessively large for cooking purposes. Clear away all leaves from the vacant ground.

Late Peas.—Late Peas have done well owing to the wet weather; the varieties Edwin Beckett and Gradus have been grown side by side and both crops are wonderful, the Peas being the finest we have had this season and the pods are large and well filled, and the haulm free from mildew.

Box Edgings.—Where time will permit, dwarf Box should be trimmed and the paths cleaned before the fall of the leaf. Box cut now always has a clean appearance in spring. Any blanks should be filled with fresh plants as the work goes on.

Onions.—The crop that has been harvested should be examined and any bulbs that appear to be going wrong removed. If they have been well ripened they may be placed in the storeroom and laid on shelves, or roped and hung from the roof. It is important that the store-room in which Onions are wintered should be dry.

Carrots.—Carrots still in the ground should be lifted and stored in sand. By leaving them in the ground many will crack and go wrong. Late sown crops should be kept free from weeds and the hoe worked between the lines to check young weeds.

FLORISTS' FLOWERS.

SELECT SWEET PEAS.

THE Floral Committee of the National Sweet Pea Society has compiled the following up-to-date selection of varieties, with the names placed in alphabetical order. An asterisk (*) indicates the variety which the Floral Committee consider the best in each of the Colour Classes; a dagger (†) indicates a variety of special value for cultivation under glass.

Bicolor (*Light*).—*Bonfire, Dora (A.M., 1915), and Sparkler.

Cerise (*Scarlet*).—*†Royal Scot, and Wonderful.

Cream.—Daffodil, Majestic, and *†Matchless.

Cream Pink (*Pale*).—Bridesmaid, *Fair Lady, and Mrs. Arnold Hitchcock.

Cream Pink (*Deep*).—Giant Attraction, La France, and *†Picture (A.M.).

Crimson.—*Charity (A.M.), Crimson Glow, and Field Marshal.

Fancy.—*†Angèle, Prince George, and Skylight.

Flushed.—Conquest, *†Fairie Queen, and Mrs. J. T. Wakefield (A.M.).

Lavender (*Rosy*).—Austin Frederick Improved, Diana, and *†R. F. Felton (A.M., 1912; S.M., 1913.

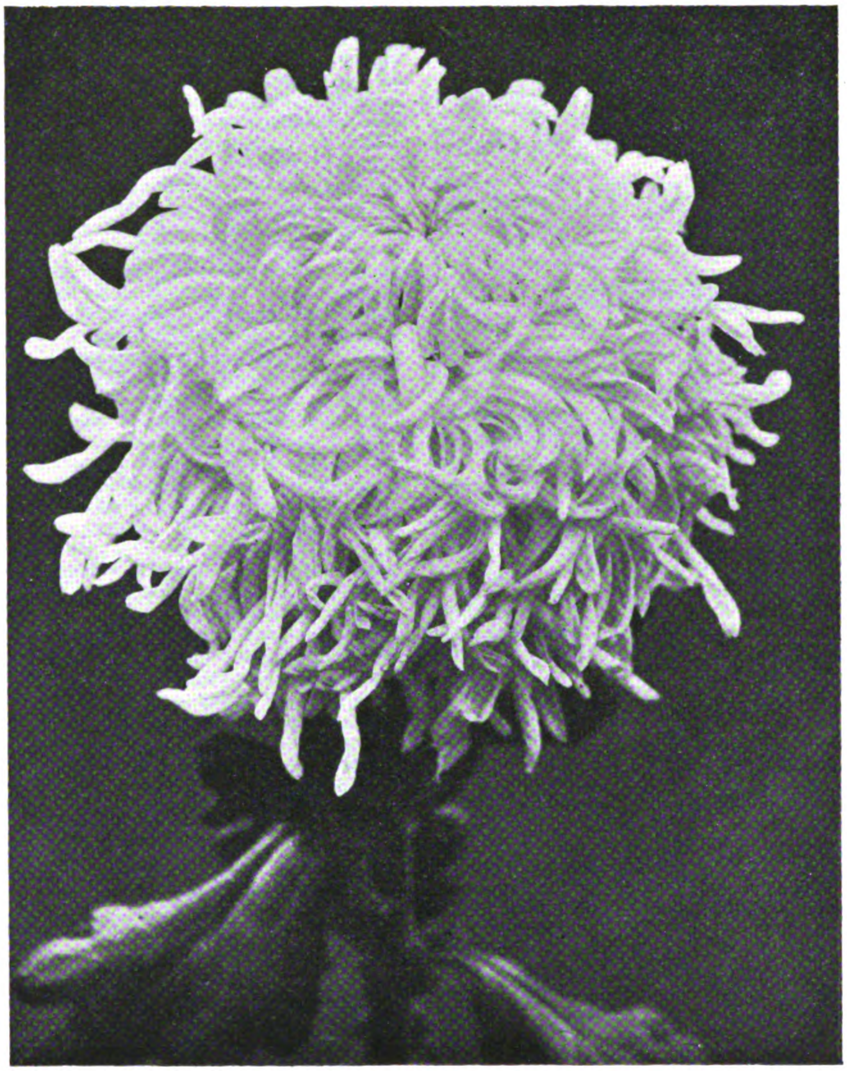


FIG. 95.—CHRYSANTHEMUM REGINALD A. ROOTS.

R.H.S. Award of Merit, October 7; N.C.S. First Class Certificate, October 6 (see pp. 256 and 275).

Bicolor (*Dark*).—Adelaide, *†Magic and Marks Tey.

Blue.—Bluebird, and *Mrs. Tom Jones (A.M.).

Blue (*Light*).—*Colne Valley (A.M.), and Margaret Fife (A.M., 1915).

Blue (*Dark*).—*Commander Codsall, and Jack Cornwall, V.C.

Blush (*Pink*).—Felicity, and *†Valentine.

Blush (*Lilac*).—Agricola (A.M., 1912), and *Elegance.

Carmine.—*Mascotts Ingman, and *Renown.

Cerise (*Pale*).—Doris, Glory, and *†Hawlmark (A.M.).

Cerise (*Deep*).—Brilliant, *Charming, and Royal Salute.

Lavender (*Pale*).—Elsie Dene, Lord Lascelles (A.M., 1924), and *†Wembley, F.C.C., G.M., 1924).

Lavender (*Lilac*).—Gladys, Lavender Bell, and *†Powerscourt (A.M., 1921).

Lilac.—Dorothy, Italia, and *†Mascotts Helio.

Marbled and Watered.—*Birdbrook, Helen Pierce Spencer, and May Campbell (A.M., 1911).

Maroon (*Red*).—Hawlmark Maroon, Maroon (Dobbie's), and *Splendour.

Maroon (*Dark*).—Ravenswing, The Sultan (A.M., 1921), and *Warrior.

Mauve.—King Mauve, *†Lady Evelyn, and Shamrock.

Orange.—Royal Sovereign, *†Guinea Gold (A.M., 1924), and Wizard.

Orange (Pink).—Bunty, *†George Shawyer (A.M.), and King Alfred.

Orange (Scarlet).—Gloriosa (A.M. S.M., 1922), *†Mammoth (A.M., 1924), and The President.

Picotee Edged (Cream Ground).—Cherub, and *Jean Ireland (F.C.C., 1915).

Picotee Edged (White Ground).—*Annie Ireland, Elsie Herbert (A.M., 1906), and Youth.

Pink (Pale).—*†Daisybud (A.M.), Edith, and Pink Pearl.

Pink (Deep).—*†Hawlmark Salmon Pink, Hebe, and W. J. Unwin.

Purple.—Grandeur, Le Mahdi, and *Royal Purple (A.M., 1914).

Rose.—Private Jack Smellie, Rosabelle, and *Sunset (Bolton's) (A.M., 1921).

Salmon (Orange).—Barbara (F.C.C., 1911), Sunset (Stevenson's), and *†Tangerine Improved.

Scarlet.—*†Hawlmark Scarlet, Mascott's Scarlet, and Scarlet (Dobbie's).

Striped and Flaked.—Loyalty, Phyllis, and *Senator Spencer.

White.—*†Edna May Improved, Joan Ryder, and Mascotts White.

White (Tinted).—(These are dark seeded varieties) *Constance Hinton, and Miss Burnie.

RHODOOENDRONS.

V.—Rhododendrons in the Garden.

(Continued from page 253).

As these notes are written primarily for the owner of the small garden, I will begin with the small species and a warning. The suburban householder cannot afford to grow the smallest Rhododendrons. He wants something more worth looking at. Therefore nothing smaller than under-shrub size—R. hippophaeoides or some of the "Cephalanthums"—is worth bothering about. The "Lapponicums" are a stout family of dwarf alpines and under-shrubs with yellow, purple, crimson, lilac, violet, or lavender-blue flowers and very small leaves.

R. intricatum is a pigmy shrub about a foot high, bearing an abundance of large, lilac flowers with orange coloured anthers. Still smaller, forming dense carpets, which scarcely rise six inches above the ground is R. fastigiatum with rich violet flowers and purple filaments. The pale sea green of the young foliage is very striking. R. impeditum is not obviously different.

R. hippophaeoides forms erect, leafy bushes, twenty inches to thirty inches high. The lustreless foliage is dark and light green, and at the ends of the many branches are borne the small, tight heads of bright lavender-blue flowers. These open in April. This specimen is very similar in appearance to R. scintillans.

R. flavidum is a compact, leafy under-shrub, growing about two feet high. The upper surface of the leaf is highly polished and the bright green contrasts pleasingly with the pale sulphur flowers and brick-red anthers. It also flowers in April, and would be an asset on any good rock garden, were it on the market, which it is not.

For yellow dwarfs one is driven to R. chryseum, a smaller, more twiggy plant, whose flowers are unfortunately not so golden as they sound. Or, going outside the "Lapponicum" series altogether, one may collect and cherish the rare Siberian R. chrysanthum (rare, that is, in cultivation) with large, golden yellow flowers. It is suitable for damp places near the bog, on the rock garden, but it cannot be bought cheaply.

The "Lapponicum" Rhododendrons are of particular interest, because they include species which definitely grow on limestone cliffs and in bogs and other septic situations. R. rupicolum, for example, beaded with rosy-purple flowers, is as much a limestone lover as is the better known European R. hirsutum.

Rather different in appearance—as pointed out by Sir Isaac Bayley Balfour, who founded the series—are the "Cephalanthums." Their chief claim to distinction, however, is the fact that their leaves are aromatic. They are, like the closely allied "Lapponicums," dwarf or under-shrub plants, often growing socially. Delightful little species are:—

R. sphaeranthum, a compact, twiggy, under-shrub, twelve inches high at most, covered with clots of shell-pink or milk-white flowers. It forms continuous loosely aggregated carpets in the scented Pine woods. R. ledoides is not obviously different from this species.

R. cephalanthoides, a dense little under-shrub, or attaining the dimensions of a small shrub, three feet to four feet high. The massed flowers are snowy white. It is a limestone plant found in the topmost forests whence it extends to the open screes and becomes very stunted.

R. Sargentianum, with sulphur-yellow flowers, which, however, are no improvement on those of R. flavidum.

The above are all truly dwarf species, giving a fine range of colour and habit. In nature they are mostly moorland plants covering hundreds of square miles of fell; but they are found in all sorts of queer situations. In this country they do best on a bank facing north, in light, rich soil with plenty of leaf-mould or peat. They are admirably adapted to the rock garden; or they may be massed in beds, since they mix well, without fear of reprisals.

If I were asked to select my half-dozen favourites I would unhesitatingly give R. hippophaeoides, R. chryseum, R. fastigiatum, R. sphaeranthum, R. cephalanthoides, and R. micranthum. Of these, three, namely R. fastigiatum, R. chryseum, and R. sphaeranthum are hardly suitable for bedding in a tiny garden. The other three may be bought at almost flowering age for a little over £1 and quickly propagated from cuttings. R. hippophaeoides and R. micranthum look particularly cheerful when massed in a bed or along a border.

If, despite my warning, the reader wishes to indulge a craving for weird, rather than beautiful, Rhododendrons, there are the "Saluenensis" and "Campylogynums"—at twenty-five shillings each—to satisfy the most whimsical taste; R. saluenense or R. calostrotum for the first named. R. myrtilloides or R. campylogynum for the second. The reader may seek out these curiosities for himself. They are all in cultivation, though the nursery catalogues maintain a discreet silence concerning them, probably because they cannot keep them. Then there are the "Lepidotums" with solitary, terminal, purple, or florescent flowers.

Very different to any of the above, nevertheless still a dwarf in habit, is the lovely R Williamsianum.

It would be impossible to select the most beautiful Rhododendron of the eight or ten hundred known species. Indeed it would be a silly task. But if required to select the dozen most beautiful species the list would have to include R. Williamsianum. In this country it forms a low, sprawling, intricately branched under-shrub, the stems rising a foot above the ground. To all intents and purposes the plant is prostrate and as flat as a pancake, so that it is perfectly suited both in size and habit to the rock garden. The shortly-stalked leaves are almost orbicular, dark green above, pallid below, in the style of the "Soulieri" series to which it belongs. The loose, easy truss carries four to six nodding flowers of a pure rose-pink, each corolla being an inch-and-a-half long and nearly two inches across at the mouth. It blooms in April.

I pass on now to stouter species; still deserving of the title of under-shrub, but larger than most of those already named.

R. racemosum is a very floriferous species flowering when only ten to fifteen inches high. In that state it is neat and compact; but it is apt to expand into a six foot shrub and then it becomes leggy. The flowers are bright pink, occasionally almost white, and are borne in terminal and axillary bunches. The coral red buds and brightly silvered under-surface of the leaves add to its charm; but it is a plant which requires to be massed in close formation to get the best effect.

R. oleifolium is its near relative with larger flowers and dark green coriaceous leaves. The plant itself is rather smaller than R. racemosum.

Another pretty dwarf, and probably the only one of its kind worth trifling with in the garden is R. glaucum, a two-foot high tanglement. The leaves are glaucous beneath and aromatic; the pink flowers are borne in tight corymbs on stalks one inch long. It flowers in May. Of the smaller shrubs, few fare better than the little deciduous Japanese R. quinquefolium. Though growing but three or four feet high, its naked twigs are in April snowed under beneath drifts of pale pink or white blossom. Like so much of old Japan, it has a daintiness, a sort of spiritual grace which is irresistible. It is, of course, an Azalea, but cannot be omitted.

R. moupinense is a dwarf, twiggy bush covered with shiny, Box-like leaves and coral-red buds. It grows a foot or two high and in March is covered with large white, red dotted, slightly fragrant flowers filled with a sheaf of carmine anthers. R. moupinense is one of the most precocious species, flowering in its third year, and is admirably suited to the rock garden; but so early does it flower—February or March—that the blooms are liable to frost-bite.

Rather different from any of the above is R. micranthum, which forms dense bushlets about five feet high. It is an unusually floriferous little species, the fragrant white flowers gathered into terminal racemes crowding amongst the Myrtle-like leaves. It flowers in May or June.

R. oreotrephes is a plant which deserves to be grown for its foliage alone, though the cheerful rose-pink flowers in nodding trusses are delightful. The neat oval leaves are bright, glaucous green above and smoky grey below. As I know it, it forms a rather dense shrublet, two feet to three feet high, or less in open situations, small enough for the back of the rock garden or large enough for the bed; but it has been described as a large shrub or tree of fifteen feet to twenty-five feet. At any rate it flowers at eighteen inches high, and is extremely hardy.

There are a number of closely allied phyla on which no inclusive name has yet been bestowed. These phyla are "Sanguineum," "Neriiflorum," and "Haematodes." Upwards of fifty species have been described, but many of these differ only in technical details.

Of those which are—or soon will be—on the market, the following seem to me to be the most desirable; but it must be borne in mind that where so much variety exists, one species, though to the profane eye it may exactly resemble another species, might betray its independence by being a little hardier than its cousin, or a little less susceptible to chills, or slightly more floriferous, or a better colour. In other words, a very slight external difference—a few more scales on the leaf, less hair on the ovary (differences which few of us appreciate, but which botanists will point out to you with a scalpel in the laboratory) may be correlated with a slight change of constitution. And though the former leaves the horticulturist cold, the latter warms his heart. *F. Kingdon Ward.*

(To be continued).

NURSERY NOTES.

MR. W. WELLS, JUNR., MERSTHAM.

THOSE who delight in hardy plants, whether for growing in the herbaceous border or in the rock garden, will find a visit to Mr. Wells' nursery well worth while. At the time of our call, in early October, we were favoured with a sunny afternoon, and a walk round the nursery in company with Mr. Wells proved highly interesting, for his knowledge of plants is most thorough, and having travelled wide and far he has collected many interesting plants. Moreover, his skill as a cultivator is of an exceptionally high order, and many subjects which are generally recognised as "difficult" are quite at home in his nursery, which is situated within easy walking distance of Merstham station, in Surrey.

So varied is the collection of plants that it is not an easy matter to know where to begin these notes. Michaelmas Daisies were, of course, an outstanding feature and these are grown in large quantities. Two of the Amellus section which pleased me most were Advance and Wells' Favourite. Advance is very similar to the well-known King George, but flowers later. Wells' Favourite is a rich lilac-pink, and has recently received an Award of Merit from the Royal Horticultural Society. In the Novi-Belgii section, a few of the most outstanding varieties were Little Pink Lady, a magnificent pinkish coloured double flower which does not spoil with age; Elsa, rosy-lavender, with well-formed double flowers; Dick Ballard, large, double rosy-pink and exceptionally free; Snowdrift, double white; Mons, a good single variety of neat habit and deep rose-lilac colour; and Ethel Ballard, one of the prettiest of the pink coloured varieties, possessing large, single flowers. These are but a few varieties of the rich and varied collection at Merstham, and in the beds it was interesting to see the dwarf plants from lat-rooted cuttings, only a few inches in height, flowering profusely on their single stems; indeed one wonders why such a practice is not followed in gardens, as the plants would be most useful for grouping in the front of borders for providing a display at a time when hardy flowers are none too plentiful.

Delphiniums are also one of the many specialities of the firm, and the collection contains such beautiful varieties as Mrs. Thomson, Millicent Blackmore, Captivant, Mrs. W. Wells, Mrs. Shirley, Nora Fergusson, and Mrs. H. Kay; while Phloxes, Lupins, and Pyrethrums also have their quota of up-to-date varieties in the extensive nursery. The varieties of Anemone japonica are also worthy of mention and include Kriemhilde semi-double, rosy-red; hupehense, rosy-crimson; Géante des Blanches, white; Autumn Queen, pink; and Beauté Parfaite. Helianthus sparsifolius and H. Monarch—two extra tall, large-flowered varieties which are as alike as two Peas, made great splashes of colour, and are two serviceable plants for the back of the herbaceous border, attaining as they do a height of eight feet or so and bearing deep Sunflower-like flowers about five inches across.

It is, however, with the Gentians that Mr. Wells excels superlatively, and they seemingly flourish at Merstham without very much attention; there is no mysticism about their culture, they are treated as very ordinary plants and for the main part are cultivated in simple nursery beds. There was, in fact, a bed of Gentiana acaulis which contained at least forty-thousand good clumps for distributing this season, and so far as we could see there was not a single "miss" in the rows and every plant was in a prime health, bristling with flower buds. Mr. Wells has indeed cause to pride himself on this one stock alone, but I was also shown numberless younger plants of this self same stock, which in their turn will find a place in many gardens in the country. The origin of this perpetually-flowering stock is interesting. Mr. Wells came across the parent plant in a neighbouring garden where it grew like a weed and flowered continually. In time he procured the clump, from which he has propagated his vast stock, and during my visit the bed was studded with beautiful blooms; were the plants to remain *in situ* another year the bed would be a blaze of blue in the spring, for every tiny growth possessed an ensheathed flower bud.

Gentiana Farreri, G. sino-ornata, G. Lagodechiana, G. pneumonanthe, G. cruciata, G. Purdomii, G. septemfida, and G. verna are all grown by the tens of thousands and were to be seen in various stages of growth, from seedlings to mature tussocks. There is also a huge stock of the angulosa form of G. verna, which is not so fastidious in its requirements as the type species. Again, at Merstham it is very simply grown in the well-drained, fat, loamy soil and is perfectly at home. All who have failed with G. verna—and who has not?—are recommended to try G. v. angulosa, which is even a better form in point of flower than G. verna.

Another interesting plant was the stately Lobelia Tupa, an old but rare Chilean species which has large, handsome, pale-green foliage and mammoth spikes of brilliant reddish flowers, attaining a height of about six feet. The plants were past their best, but a month ago they must have been a very fine sight; now they are well set with seed pods from which a crop of seedlings, as in former years, will be raised. Although quite hardy, it would doubtless prove an admirable pot plant for the cool conservatory, and it would be interesting to see if it would cross with the moisture loving L. cardinalis or fulgens, for to our mind L. Tupa even surpasses in beauty the many varieties and forms of this plant which, unfortunately, do not withstand the winter. What a grand plant, too, is Cimicifuga racemosa simplex; it was on this rare, sunny afternoon beautiful to behold, its gracefully arched white racemes swaying in the breeze with Red Admiral butterflies fluttering and feasting upon it.

Of Geums there were the beautiful G. Borisii, which bears rich orange-scarlet flowers; the double yellow Lady Stratheden, which makes a fitting companion to the scarlet G. coccineum Mrs. Bradshaw; the dwarf, early-blooming G. montanum with golden—almost stemless—blooms, and G. Rossii, another yellow-flowered species with Fern-like foliage. Mr. Wells has also some very striking hybrids with extra large flowers of orange and scarlet shades, and which, when stocks are obtained, will provide a very useful addition to this sun-loving race of plants.

Campanulas, too, are grown in profusion, and include C. Hallii, which bears widely expanded bell-shaped, white flowers; C. rotundifolia Jenkinsonii, a variety which received an Award of Merit in 1922, and carries its five or six white flowers on erect stems; and many choice forms of C. garganica, C. carpatica, and C. pumila. Saxifragas are also well represented by countless specimens of all sections. Among the encrusted types were varieties of S. Aizoon, S. lingulata Albertii, S. Sendtneri, and in the Kabschia section was the charming hybrid, S. Jenkinsiae, resulting from a cross between S. Burseriana major and S. lilacina.

It is with regret that these notes must close, feeling as I do that but a few of the plants deserving of notice have been touched upon. Before doing so, however, mention must be made of the hedge of Lonicera nitida, where, in the frame-yard, it serves the dual purpose of being attractive and providing a good wind-break. It is from four to five feet high and is still making rapid growth. Two strained, galvanised wires are all that are used for upholding the growths, which do not resent shearing; in fact so closely have the shoots been cut that the hedge is no more than four inches thick, and yet it is a solid wall of growths so densely clothed with small shining foliage as to make it a fine shelter. *R.*

AN ENDEMIC PERONOSPORA ON THE HOP IN ENGLAND.

IN 1920, a species of "Downy Mildew" (Peronospora) was noticed in the Experimental Hop-garden at Wye College, Kent. The fungus, in its earliest visitations, was noticed as causing inconspicuous angular brown spots on the leaves of the Hop. The fungus could not be found during the dry season of 1921, but in 1922 it re-appeared in the same Hop-garden and was found attacking, not only the leaves, but also the Hop-cones.[*]

In 1923 and 1924 the disease again appeared, the wet weather of the present year probably assisting its spread.

No previous record existed, we believe, of the occurrence of any species of the Peronosporaceae on the Hop (Humulus Lupulus) in Europe. In 1905, Professors Kingo Miyabe and Y. Takahashi found a "Downy Mildew" on cultivated (and also wild) Hops in Japan and described it as a new species, Peronoplasmopara Humuli. Dried specimens of this fungus from Japan were obtained from Professor Kingo Miyabe, and the fungus was found to agree in its characters with the "Downy Mildew" on the Hops at Wye. The same species has also been reported as being indigenous on the wild Hop in North America.

In our previous article (*l. c.*) the assumption was made that this Downy Mildew of the Hop had been introduced into this country (*i.e.*, to Wye) on Hop plants imported from Japan or America.

We have now to record that an endemic species of Peronospora exists on the so-called "wild Hop"[†] in hedges and uncultivated places in the South of England.

This Peronospora was first found on Hop-plants in roadside hedges at Westwell, near Ashford; then on plants in a similar habitat in the parishes of Egerton, Hothfield, Addington and East Peckham—all in Kent. A search was next made for the fungus in another county, far away from Hop gardens, and it was quickly found on a "wild Hop" in a waste piece of ground at Twickenham in Middlesex.

The characters of the "Downy Mildew" found on these "wild Hops" agree well with those of Peronoplasmopara Humuli; it forms angular brown spots on the leaves, and the size of the sporangium and also of the oospore is practically identical.

Having regard to the new facts now recorded, there are two possible explanations of the recent appearance of this new disease of Hops (which appears likely to be of considerable economic importance). The disease may have been introduced on imported plants, or the fungus on the "wild Hop" may have spread into the Experimental Hop-garden at Wye—in which case the apparent freedom of other Hop-gardens in Kent from this disease is hard to understand.

The species of Peronospora, P. Urticae, which is not uncommon in this country on the Nettle (Urtica dioica and U. urens) is in its characters closely similar to, if not identical with, the species on the Hop, and we are engaged at present in investigating whether the two are truly distinct. *E. S. Salmon and W. M. Ware, Mycological Department, Wye College, Kent.*

---

[*] An illustrated account of the disease was given in the *Journ. Min. Agric.* XXX., August, 1923.

[†] In the South of England such Hop-plants probably originate from cuttings of cultivated Hops.

THE ROSE GARDEN.

PERPETUAL-BLOOMING ROSES FOR LIGHT SOILS.

THE common belief that Roses will not succeed on soils of a porous or light texture is not true, for many of the H.T. varieties and the Pernetiana types will flourish on such soils, and what is more, the blossoms possess a delicious fragrance.

Top dressings of short, decayed horse, cow, or pig manure applied separately or mixed together will answer admirably. Soot, bone meal, fish manure, or Peruvian guano, given in moderation encourages the development of clean growth, clear colours, and a long blooming period.

The following varieties are worthy of extended cultivation, especially on soils generally regarded as "not suitable for Roses." These Roses are also adapted for bedding purposes owing to their late crop of blooms in autumn.

Sunstar is a variety of great garden charm, compact in growth, producing flowers of a beautiful colour blend, clean and endowed with a delicious fragrance. It is a splendid bedding companion to Elizabeth Cullen.

Mrs. Wemyss Quin, is Daffodil-yellow colour. This variety is very free-flowering, and suitable for cultivating in soils that are not too genial to the Rose family.

Elizabeth Cullen is a Rose of transcendant beauty, both as to colouration and fragrance, and worthy of a place in every garden.

Two blooms of Elizabeth Cullen will scent any one room. The colour is deep crimson. The growth is dwarf, clean, and bushy. The plant blooms from June until the advent of frost.

Sunstar and Elizabeth Cullen used as bedders give a glorious combination of colours, and, being continuous croppers, are sure to find numerous admirers.

Mabel Morse is to my mind unsurpassed as a deep pure yellow variety; and one of great merit. The foliage is fresh and of a deep green shade; the habit is dwarf, and the plant free blooming.

Madame Butterfly is worthy of extended cultivation. For table decoration it supplants Ophelia, and is a splendid bedder.

Miss C. E. Van Rossem has blooms of dark velvety crimson, exquisite of form and moderate in size. The growth of the plant is branching and free-flowering. The foliage is clean and healthy.

W. F. Dreer has large and very shapely blooms, a combination of salmon-pink and deep yellow. It is one of the best bedding Roses, the growth being strong, branching and clean, giving a large crop of beautiful flowers late in the season.

Lady Pirrie is too well-known to need a lengthy description from me. The blooms are of a coppery reddish salmon or apricot-yellow flushed with fawn. It is a Rose of great value for bedding purposes.

Los Angeles will be in great demand for cut flower purposes and garden embellishment. The plant is continuously in bloom. The colour is deep salmon-red, with salmon-pink and apricot base. The growth is clean, branching and very floriferous.

Gorgeous is a variety possessing a rich fragrance, reminding one of Atta of Roses. This is one of the best six Roses for fragrance. It is free in growth and flower, the colour blendings being a combination of deep orange-yellow, flushed with copper yellow and veined with reddish-copper. Gorgeous is a Rose of great merit and charm.

Independence Day is suitable for use in button holes, bouquets, and table decorations. It is a splendid bedder, owing to its dwarf habit and continuous flowering. The plant grows dwarf, branching and clean in light soils.

Golden Emblem is a golden-yellow bedder of large size and perfect contour, a variety much in request owing to its many good qualities.

Etoile de Holland is a rich, dark crimson Rose, and useful for all purposes. It is a Rose with a feature for bedding purposes.

Emma Wright, a pure orange coloured Rose free in growth, is charming in every respect. *G. L.*

NOTICES OF BOOKS.

Seven Thousand Dahlias in Cultivation.

THE title of this new American publication is startling but it nevertheless will render considerable service to Dahlia raisers and growers if it can be brought actively into use. I am of a decided opinion that all florists' flowers should have a standard guide to nomenclature. The Rose, the Chrysanthemum, the Dahlia, the Carnation, and many others need something of the kind, preferably of an official character, so that raisers may, by reference to such a work, avoid using names for their new seedlings that have previously been used perchance several times before for other novelties.

The title page to this very interesting work bears no publisher's name and therefore it is presumably to be obtained direct from the compiler—the price is $2.00. The title page is brief and reads as follows: "*Seven Thousand Dahlias in Cultivation*, by J. B. S. Norton, College Park, Maryland, 1924."

The Introduction explains the purpose and how the work was compiled, and I cannot do better than just briefly quote the opening lines:—The primary reason for the preparation of this book is to make available to the large number of persons annually naming new varieties a list of Dahlia variety names now in use, as an aid in avoiding the duplication of names. While the principal aim has been to give an alphabetical list of the names used in the 1921, 1922 and 1923 catalogues, a number of other features have been added, so far as information on them is available—these are as follows:—

1. The name of the originator of the variety, or if that is not known, some catalogue or other work in which the name occurs.
2. The year of origin, or at least, the earliest date at which the records show the variety to have been in existence.
3. The class to which it belongs.
4. The colour.
5. Synonyms or important variations in the name.
6. Record of registration or Certificate of Merit given by the American Dahlia Society.
7. Number of catalogues listing the variety during the three years of record.

It would appear that the compiler has obtained 223 trade catalogues of Dahlia growers in America, Canada, Great Britain, France, Belgium, Holland and Germany. Thus he has been able to ascertain that about seven thousand Dahlias in the various sections may be considered to be in cultivation in the world at large, or at least in that part of it where Dahlias are grown to any extent.

The book is neatly printed and of a most convenient form for the pocket. It measures about nine inches in length by four inches in width. It is printed on one side only leaving each alternate page blank for note-taking purposes; altogether it runs into 291 pages.

Considering Professor Norton's patience and desire to render an exceptional service to his fellow Dahlia enthusiasts, it would be ungracious to be too severely critical. That there are errors must of course be apparent to anyone who has had to do with catalogue work or floral nomenclature in any form. No human work is perfect, especially such work as that now under consideration, but in order that such a compilation may be accepted as a work of standard authority it should, apart from the question of correct orthography, at any rate be based on a strict uniformity.

This will be best appreciated by the reader when it is pointed out that it little matters how a raiser may print the name of his flowers in his own catalogue where titles like Monsieur, Madame or Mademoiselle are concerned—they should all be made uniform in a work like this. It is not tampering with a raiser's name if, when he puts M., Mons. or Monsr. in his own catalogue, for the compiler of a standard work to spell the word in full Monsieur. An abbreviation does not alter the sense or meaning, and so Mme., Mad., Madam should be rendered in full as Madame. Souvenir is another French word frequently abbreviated, and for this reason we should object to Prof. Norton's want of uniformity in his remarkable attempt to produce a standard authority.

The need for such a book as this is abundantly exemplified when the reader turns even cursorily over a few pages. It is grievous to note the frequency with which some names have been used by growers. Thus without any effort one finds Aladdin has been bestowed on three different Dahlias, Amy on three, Ariel on four, Attraction on six, Beatrice on four, Beverly on three, Black Beauty on four, Canary on five, and so on through the whole alphabet, showing how needful it is for present day Dahlia raisers to be careful in the naming of their novelties.

To the eye used to French words it is just a little ugly to see the non-use of accents, but this seems to be a common fault amongst American writers. There are some obvious errors in French which we need not enlarge upon, they are only to be expected. Perle de Ocean, Le Glorie, Souvenir de Gustave Doazon are typical instances of cases needing a critical revision by somebody versed in French.

But these are minor defects compared with the work in its entirety. Professor Norton has produced in this work a monument of patient research and skill in arrangement, an authority for Dahlia growers to consult, and an example to some of our special floricultural societies to produce a standard of nomenclature for their members by which much confusion might be usefully avoided. *C. Harman Payne.*

HORTICULTURE AT THE BRITISH EMPIRE EXHIBITION.

SHRUBS.

ALTHOUGH collections of shrubs are not numerous in the horticultural section at the British Empire Exhibition they are to be seen in goodly quantity and in a pleasant variety.

The most important exhibit is that of Messrs. Fisher, Son and Sibray, who have filled their site with such perfect examples as it is possible to grow. Evergreens predominate, and these include a valuable selection of Hollies of delightful luxuriance. Compactly grown bush Ivies are also of importance in this collection. The taller specimens are for the most part such Conifers as Cedrus atlantica and the lovely silvery variety glauca. The Umbrella Pine, Sciadopitys verticillata and Picea Omorica, both of which thrive best in moist conditions, have made admirable growths. Several varieties of Cupressus Lawsoniana, notably a well-coloured specimen of C. L. lutea, Retinospora pisifera aurea and R. obtusa Crippsii are perfect in form and rich in colouring.

Silver Firs are well represented by Abies concolor and A. arizonica, while Podocarpus koreana is full of vigour. Griselinia littoralis, an evergreen which is usually associated with seaside gardens in the west of England, is equally successful in its rich, glossy foliage at Wembley. Several Skimmias have fruited well and the berries are now becoming brightly coloured. A couple of Dimorphanthus mandschuricus aurea marginata have made leaves even longer than the name and of much greater beauty.

The little shrubbery which Messrs. Wallace and Co. have associated with their delightful rock garden and rocky pool contains useful and interesting shrubs. Earlier in the year they had some of the newest Rhododendrons and deciduous Azaleas in full bloom and these attracted a great deal of admiration. Pyruses and Brooms also were good. Shapely little Conifers grace the rock garden, which also contained Heathers, particularly Menziesia polifolia in purple and white; well-grown Hollies, Skimmias and other evergreens are also to be seen.

Around their "Garden of Remembrance, planted in honour of the heroes who fell in the Great War," Messrs. G. Jackman and Son have a neat shrubbery border in which they have grown Gladioli in quantity and other flowering plants. As is to be expected Clematis are freely shown, and these include many of the sorts we admired at the recent Holland Park Hall Show. Although not always, or perhaps strictly, a shrub, Gaura Lindheimeri is delightfully pretty just now. The shrubby little plants are nearly three feet high, and carrying quantities of pink and white flowers of delicate beauty. Earlier in the season Kalmia latifolia, Deutzia crenata fl. pl., various Pyruses, Cytisuses and Buddleia variabilis magnifica were very attractive, while several of the taller Hypericums of H. patulum type still have showy yellow flowers.

In this section hedges of shrubs are quite an important feature. The most uncommon hedge is that of Retinospora pisifera aurea which encloses the delightfully arranged garden ot Messrs. Watkins and Simpson. The pale yellow Retinospora makes a delightful low hedge.

Messrs. Dobbie and Co. have shown what a cheerful shrub Lonicera nitida is where a low, green hedge is needed. The shrubs have grown well and are an ideal background for their Rose-garden.

Yew is the most favoured hedge plant, and grand examples are to be seen around the gardens of Messrs. G. Jackman and Son; the Carnation garden of Messrs. Allwood Bros., and the plots where Messrs. Sharpe and Co., Messrs. Green and Sons, Messrs. Ransome, Sims and Jeffries, and Messrs "Atco" show their lawn mowers. The tallest hedge plants are around the garden of Messrs. Wallace and Co.

BULB GARDEN.

NERINE BOWDENII.

I fear Mr. Arnold's statement on page 254 requires a little amendment. Following the advice of Mr. Peter Veitch I planted some bulbs of Nerine Bowdenii about eight inches deep at the foot of a south wall, where they had the benefit of all the sun we have. This must have been at least six or seven years back. It is perfectly true they are quite hardy in this cold district (English Maelor in the county of Flint), but I have never had any good flowers. Spikes appeared regularly but so late that cold overtook them before the umbels were properly developed, and I put this Nerine in the category of those plants which are a success in the sunny south and in warm spots here and there in other parts of Britain, but which, alas, only bring disappointment in colder places. I may state that Mr. Veitch has raised some beautiful hybrids of N. Bowdenii at Exeter which seem to be equally as "hardy" as the typical N. Bowdenii. *Joseph Jacob.*

ALPINE GARDEN.

SAXIFRAGA IRVINGII.

Saxifraga Irvingii, although a very small plant, is a gem for the rock garden or alpine house. The growth is very short, the new shoots, which are made through the summer, being only a quarter-of-an-inch in length, and these are covered thickly with minute leaves which can be discerned clearly in the photograph (Fig. 96). S. Irvingii does not grow so rapidly or extend so freely as plants of the S. Burseriana type, hence it is several years before a specimen attains the dimensions of the one here depicted, which is growing at Coombe House Gardens, Croydon. Once the plant is established, however, patience is well rewarded. This Saxifraga always retains its clear grey-coloured foliage on its new growths, but the flowering growths of the previous season have a habit of dying after the plant is placed under glass, and if these dead tips are not taken off they tend to make the plant appear untidy; they are easily removed by means of a sharp knife.

When the flower buds appear they have a wonderfully clear pink colour on the folded petals, but as the flowers open this colour fades to a very pale rose. The style is of a real rose colour and the ovary a deep rose; they are the cause of the deep colouring of the flower, which appears to be pink as seen from a short distance, but upon closer examination it is at once evident that these two organs are the direct cause of this colour illusion. The flowers are produced on stems about three-quarters-of-an-inch in height. The pan in which the plant is growing is eight inches wide and five inches deep. After the plant has flowered, the pan is plunged in coke ashes up to the rim, outdoors, from May until October, and water is freely given through the summer months. In October the specimen is removed to a cold frame, air being admitted night and day and continuously, as I. Irvingii is quite hardy. *Mark Mills.*

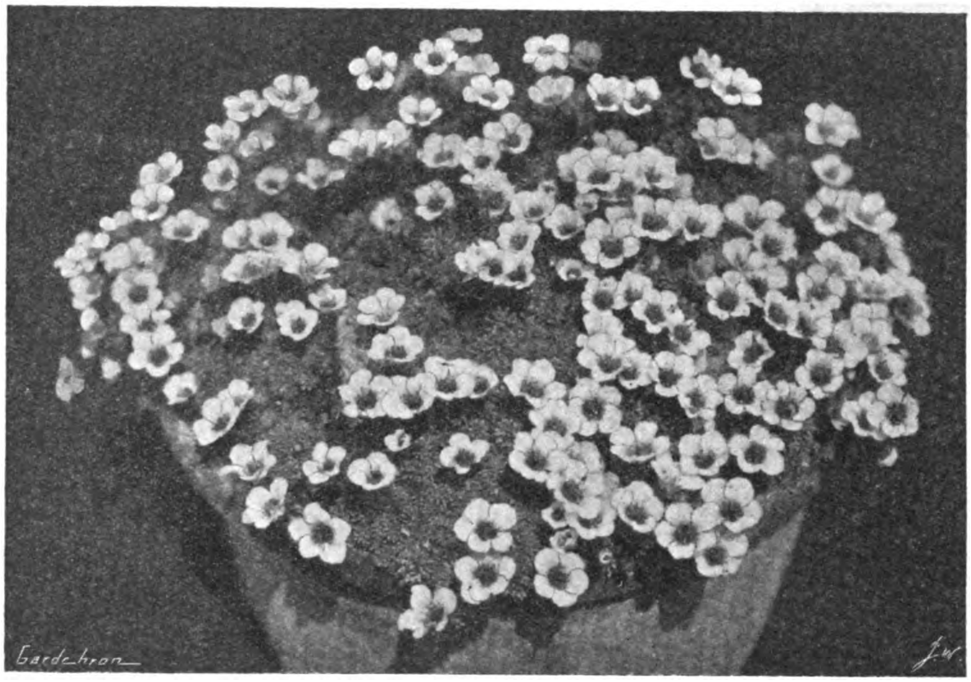


FIG. 96.—SAXIFRAGA IRVINGII.

VERBENA VENOSA.

May I point out to Mr. Arnold (p. 245) that many growers of rock plants would fain add some Verbenas to their treasures, but they are generally wisely deterred by the fact that none of those we possess are as hardy as we would like, and tha most, if not all of them, require some winter protection.

From time to time we find V. chamaedrifolia and V. venosa exhibited and catalogued among hardy flowers, often to the sorrow of those who know little about them and are tempted by the worthy desire of cultivating a hardy Verbena. To all who may think of planting these in their rock gardens I would respectfully offer the advice to consider carefully before doing so. V. chamaedrifolia is brilliant with its scarlet flowers, and V. venosa, while less gorgeous in its colouring, is delightful with its rosy-purple heads of blooms. Of the two V. venosa is a good deal the hardier, and will frequently withstand the winter in places where V. chamaedrifolia would succumb. Yet it is not truly hardy, except in the warmer and drier parts of the country and in exceptionally dry and well-drained soils and sunny positions. I have seen V. venosa exhibited recently among rock plants, and catalogued as a hardy Verbena. But I am in entire agreement with high authorities that V. venosa should not be depended upon to remain in the open during winter. It ought to be lifted and stored in a frame or greenhouse, where, in boxes or pots of light soil, the fleshy roots will be safe and will provide plenty of stock for the next season. It is very attractive when in flower, especially as it lasts a long time and gives us flowers at a time when the rock garden is becoming dull and colourless. It blooms practically through summer and autumn. Where it will withstand the winter in the open it is a valuable plant. It may also be raised from seeds, sown early under glass in heat.

Verbena chamaedrifolia has a somewhat lax habit, and for this reason it is very suitable for forming a dwarf carpet as a ground-work to flower beds, as the shoots are easily pegged to the soil. *S. Arnott.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

GARDEN-CRAFT IN THE CANTICLES—VII.

LET us now take a survey of the vineyard. It is well known that viticulture was brought to a high state of perfection in the East in very early times. According to the ancient Hebrew story, as soon as the flood subsided "Noah began to be a husbandman, and planted a vineyard" (Genesis IX, 20). When the spies which had been sent to Canaan returned to the camp they are said to have carried back with them a bunch of Grapes suspended on a pole between two of them. Far-famed were the Grapes of Eschol. Solomon is represented as saying (Eccles. II, 5) that he planted vineyards and made gardens and parks in which he planted all kinds of fruit. Almost everyone of the Hebrew poets and seers has some allusion to or parable from the vine and vineyard. For our purposes reference should be specially made to Isaiah (V, 1–8). The best ground was chosen and digged, the stones were removed, a hedge was planted, and the choicest vine selected; all of which shows us that the methods adopted for securing the best results were exactly those which commend themselves to the present-day vine grower.

That wine, the blood of the Grape, was fully appreciated by the writer of Canticles is evident. He speaks of love as being better than wine, and more worthy of mention. Wine with milk (V, 1) and spiced wine (VIII, 2) or sweet wine was a favourite beverage. Let us examine one or two of the allusions which show familiarity with the vine and its culture.

First comes the statement of the Shulammite maiden: "They made me keeper of the vineyards; but mine own vineyard have I not kept." The duties devolving on one who cared for the vines were numerous. It was necessary in most instances to water or irrigate them. In well-appointed vineyards this was often a comparatively easy task. The water was brought by stream or channel into or near the garden, and was capable of being diverted in every direction as might be necessary. Frequently no effort was needed other than the removal of a slight dam of earth by the foot; but in well-kept vineyards the sluices were carefully arranged and had to be constantly regulated. That the pruning of the vine entailed much skill and labour is well known. Beloved of all readers who love garden-craft is Virgil, whose Georgics and Eclogues abound in allusions to the vine. In the remarkable fourth Eclogue, which contains a seeming reference to the Messiah, a time is predicted when the vine shall not be subject to pruning-hook nor the field to the hoe, while the yoke shall be loosed from the neck of the ox. The passage reads like some of those to be found in Isaiah or the Book of Psalms. The pruning-hook is frequently mentioned in Hebrew and other literature in pre-Christian times, and the words of Christ in the parable of the vine show perfect familiarity with the art and end of pruning. On this subject the best and fullest information has for many years past been afforded by the columns of *The Gardeners' Chronicle*, so that little need be said respecting it here. Virgil in one place (Eclogue II. 84) refers to the half-pruned Vine clinging to the Elm. This reminds us that the Elm was largely in request in the vineyard. The training of the vine and the duties of the keeper of the vineyard are well set forth in the following lines. I quote from Royds' translation of Virgil's Georgics (Bk. II. 424).

> When all is safely planted, it remains
> To draw the earth about the roots, and ply
> Stern hoes; or deeply drive the frequent plough,
> And e'en through vineyards guide the straining steer.
> Then must you furnish shafts of barkless wand,
> Smooth reeds and ashen poles and stalwart forks,
> That the young plant, relying on their strength,
> May rise to mock the winds, and climbing higher
> Attain the topmost storey of the Elm.

The next paragraph is so full of interest that it merits quotation here, especially as it bears on another point shortly to be considered.

> While sweet childhood's bloom is on the leaves
> Spare yet their tenderness; while the vine-spray
> Leaps blithely into foamless seas of air
> Unbridled, unrefrained, no pruner's blade
> May violate the vine; only the leaves
> Must with bent finger-tips be nicely thinned.
> But when with stronger stem they clasp the Elms,
> And skyward plunge, then clip their leafy locks,
> Then lop their errant limbs; from touch of steel
> They shrank before, but play the tyrant now
> And sternly check the extravagance of boughs.

These words turn our attention to another allusion (Canticles II. 13) which shows familiarity with the vine:—

> The Fig-tree ripeneth her green Figs,
> And the vines are in blossom,
> They give forth their fragrance.
> Arise, my love, my fair one, and come away.

In the Authorized Version the words are rendered: "The vines with the tender Grape give a (good) smell." So a little later (verse 15) for "our vineyards are in blossom," as the R.V. has it, the A.V. reads "our vines have tender Grapes." Probably when the Bible was translated our English scholars were not aware of the fragrance of the vine. Indeed, I have met with people myself who are quite unaware of the fact that the blossoms "give a good smell." There is a beautiful study of this passage in a work by the late Dr. McCook (*The Gospel in Nature*), yet not a word is said about the delicate aroma of the vine when in bloom. As the ear of the musician and the eye of the artist are quick to discern discord and beauty, so the sensitive nostril of the Oriental detects an odour which might be too faint, ethereal and delicate for Western noses. Here are the evidences of a fine perception. The Hebrew, we are told, while not insensible to the charm of colour and the grace of form, thought more of the perfume of a plant than of the beauty of its flowers. "And aromatic plants he, especially, seems to have delighted in," as the reader would infer from the number of such referred to in the Bible. Hence, the nearest approach to our general word "flower" is to be found in the Hebrew word *bosem*, really signifying fragrant or scented plants, as used in the "Song of Solomon" (V. 1): "I have gathered my myrrh with my fragrant balsam plant." If it be objected that flowers are mentioned in the "Ode to Spring" (Cant. II. 12) the answer is that the word (*Nitztzanim*) is a poetic form which occurs nowhere else in the Bible, while the other passages (V. 13) will come up for consideration in a later paper.

The Grape is frequently mentioned in Canticles. In the passage already quoted the tender Grape disappears from the Revised Version, being supplanted by the word blossom. The Hebrew word (*Semâdar*), which occurs three times, is generally admitted to allude to the flowers of the vine rather than to the fruit. In another passage (VII. 7, 8) we read of clusters (of Grapes) and clusters of the vine. Perhaps the first is an allusion to the Date clusters, and the second to bunches of Grapes. In any case the word is interesting since it is familiar (*Eshcol*) on account of the valley which was so named because it was rich in Grapes. Another name for the Grape, as distinguished from clusters (*Enav*, or *Ngenabh*) occurs frequently in the Old Testament, while the two together (*Eshcol enavim*) are found in the passage (Numb. XIII. 23): "They came unto the valley of Eshcol, and cut down from thence a branch with one *cluster of Grapes*." It would lead us too far afield to study the other words, ancient and modern, which relate to the vine, the Grape, and the seductive juice known far and wide by a name which is closely related to our own word wine. A brief passage from the pen of the late Dean Stanley may fittingly bring this paper to a close, because it shows the importance of the vine to the Hebrew race. He tells us (*Sinai and Palestine*, ch. III.) that in Judea, "more than elsewhere in Palestine are to be seen on the sides of the hills, the vineyards, marked by their watch-towers and walls, seated on their ancient terraces—the earliest and latest symbol of Judah. The elevation of the hills and table-lands of Judah is the true climate of the vine. He 'bound his foal to the vine, and his ass's colt unto the choice vine; he washed his garments in wine, and his clothes in the blood of Grapes.' A vineyard on a hill of Olives, with a fence and the stones gathered out, and the tower in the midst of it, is the natural figure which represents the kingdom of Judah. The vine was the emblem of the nation on the coins of the Maccabees, and in the colossal cluster of golden Grapes which overhung the porch of the second Temple; and the Grapes of Judah still mark the tombstones of the Hebrew race in the oldest of their European cemeteries, at Prague." No wonder the culture of the vine received their most careful attention. *Hilderic Friend.*

PLANTS NEW OR NOTEWORTHY.

CLERODENDRON UGANDENSE.

THIS beautiful greenhouse climber (see Fig. 97) received the R.H.S. Award of Merit on August 26th last, when shown by the Director, Royal Botanic Gardens, Kew. The seeds of this species were collected by Mr. M. T. Dawe in Uganda at 2,000 feet elevation and the Kew plants were raised from seeds sent home by that gentleman. The plant is grown in the greenhouse at Kew (No. 4 House) and trained along the roof rafters, where it grows and flowers freely in late summer and autumn.

The flowers of this exotic climber are of a striking colour; the irregular corolla has a tubular segment coloured violet-blue and the other segments surrounding it are pale blue. As the inflorescence forms a large, lax cyme a plant in flower is very imposing.

This Clerodendron is easily propagated from cuttings formed by the young shoots, and when better known it should be extensively cultivated as a decorative winter-flowering greenhouse shrub or climber. It is figured in *Bot. Mag.*, T. 8235, but the regular lobes of the corolla in the *Bot. Mag.* illustration are shown a much paler colour than those of the specimens seen at the R.H.S. meeting.

THE GERMINATING POWER OF SEEDS.

The uncertain period during which various seeds retain the power of germinating is the subject of an interesting leader in *The Gardeners' Chronicle* for October 4. Two cases bearing upon the problem have come under my notice. Some years ago Sir Frederick Moore sent me seeds of a finely coloured form of Dierama spectabile growing at Glasnevin. I was so indolent or careless as to allow the packet to lie for three years in a drawer of my writing table. When I unearthed it accidentally, there seemed little chance of the seed germinating; but I gave it that chance, with the result that it sprouted at once, and the percentage growth of must have been very large.

The other instance is one of the seeds of a native wild flower re-asserting itself. In the year 1862 my father drained Dowalton Loch, a sheet of water covering about one hundred acres. The land laid bare consisted of an expanse of peat and alluvium, except where a reef of Lower Silurian rock lay across the old lake-bottom, forming a low ridge. In the summer of 1908, forty-six years after the lake had been drained away, I visited the place with Mr. George Scott Elliott, an experienced botanist interested in lacustrine and marsh vegetation. Most of the flat surface had sagged and reverted to marsh, but the soil on the rocky outcrop was sound and densely covered with Sallow (Salix caprea), with here and there a self-sown Scots Pine and Wych Elm. The most interesting feature was a space of about a quarter of an acre carpeted with Pyrola minor. How had it got a footing there? The land for many miles around is arable and closely cultivated, and although there are patches of peat Moss and Heather not far off, and although I have made myself fairly well acquainted with the flora of the district, I have never found Pyrola minor nearer than on the banks of the Cree, fully fourteen miles distant. It is not a bog plant; it will not grow on a peat moss, but is only found where the soil is fairly sound and well drained. No doubt it was probably plentiful before the land was reclaimed and cultivated; but that takes one back at least one hundred years. The seeds of Pyrola are not volatile; they are too minute to be carried by birds. One hesitates to suggest that they had lain submerged for an indefinite period and germinated when the lake bottom was exposed; yet I am at a loss to hit upon any other solution. *Herbert Maxwell, Monreith.*

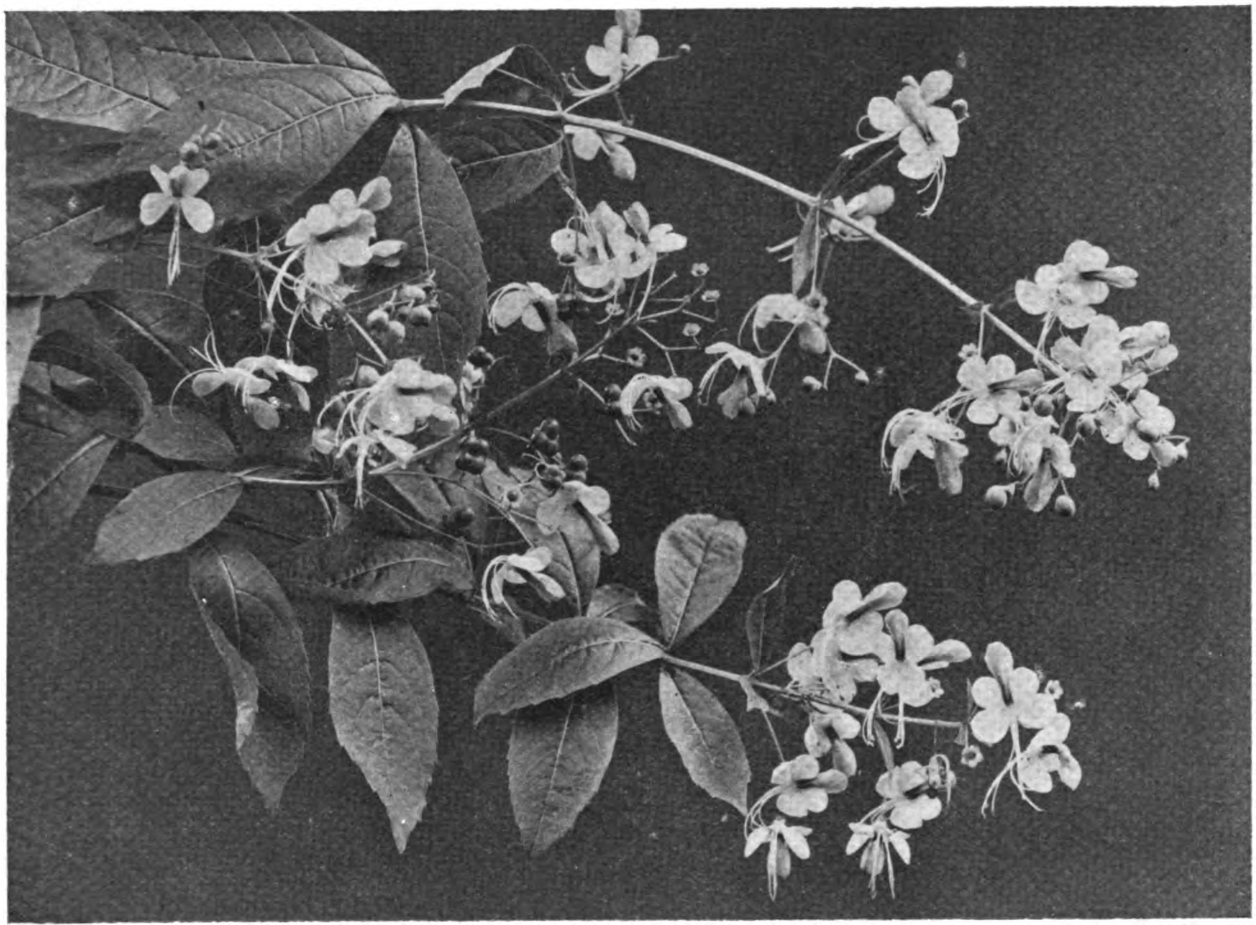


FIG. 97.—CLERODENDRON UGANDENSE (see p. 268).

INDOOR PLANTS.

ALOCASIAS.

Alocasias are amongst the finest and most distinct of stove and warm conservatory foliage plants. Their handsome leaves, when fully developed, give the plants a bright silvery appearance that makes them most attractive. The foliage is of good substance and the leaves are of long duration. These plants are unrivalled for grouping amongst a miscellaneous collection of plants at exhibitions, the foliage being so conspicuous as to attract the eye at once. They brighten the warm conservatory all through the summer, often keeping fresh and bright throughout the winter. They are easily increased by seed or may be propagated by means of suckers, and by divisions of the stems or rhizomes in the spring. The suckers should be taken off, potted at once in small pots, and placed under a handlight or frame in a moderate bottom heat, with atmospheric moisture. When the plants are rooted they should be transferred to larger pots or pans furnished with good drainage, on account of their requiring a liberal supply of water during their growing season, also from the fact that most of them are surface rooters, not pushing their roots down any considerable depth into the soil. Watering should be reduced gradually as winter draws near. To obtain a specimen plant with fine foliage in the summer, split a flower-pot in halves and place the two parts of the pots round the stem near the foliage, tie them together firmly, and fill the pot with good rough, sandy, fibrous peat and Sphagnum Moss. When the stem has rooted cut through the stem below the pot and place the "new" plant in a clean pot. The soil most suitable for the purpose is a mixture of rough, turfy, light loam, fibrous peat, Sphagnum Moss, small pieces of charcoal and silver sand. When the plant is fairly well rooted place a layer of thick cushion Moss over the soil, which will add to the appearance of the plant, especially if it is required for exhibition or other decorative purposes. The roots will creep into the Moss and strengthen the growth of the plant. When well rooted and growing freely a little liquid manure once a week will be beneficial and this stimulant will cause the foliage to assume a bright colour.

Alocasias grow freely in a moist atmosphere in any ordinary warm greenhouse or stove with a night temperature in winter of about sixty degrees. When the leaves are fully developed, should they be required for exhibition or other decorative purposes a good plan is to gradually harden the plants by placing them in a cooler house. This will strengthen the foliage and enable the plants to withstand the cool air of exhibition tents or cool conservatories.

As soon as the leaves begin to show signs of decay gradually withhold water at the roots and when the foliage is decayed place the plants in a dry part of the house until early spring, when they should be given a little water to encourage them to make fresh growth. All the old, loose soil should be removed and the plants potted afresh in suitable soil in clean pots or pans; be careful not to overpot them and use ample drainage. Water the plants carefully until they begin to make fresh roots, then give water freely. Shift on the young plants as extra root room is required and grow them in a warm temperature and moist atmosphere, being careful not to overpot them at any time.

Many hybrids have been raised but none is an improvement on the species introduced by the collectors from Borneo and other parts.

The following are amongst the finest species:—A. spectabilis, a superb species introduced from southern Malaya. When fully developed the stout foot stalks support foliage eighteen inches to twenty inches long and ten inches to twelve inches broad, the surface having a silvery sheen which makes the plant beautiful and bright. A. Thibautiana, one of the best, with large, ovate, deep olive-green leaves, that have a prominent grey midrib and veins. A. Watsoniana, a fine species and a good plant for exhibition, with dark green, wavy leaves, the midrib and veins being silvery white. A. metallica has dark bronze, self-coloured leaves. A. Sanderiana is a very distinct species, the young leaves being bright glossy green with dark blotches, on the older foliage; the surface of the lamina has a metallic blue reflection and the cross veins are white, the margin also being white. A. mortefontainensis has broad, long leaves, ivory-white midrib and veins. A. macrorhiza variegata, has long green leaves that are heavily blotched with white, the foliage frequently being quite white. A. Johnstonii is a most remarkable species. The leafstalks are furnished at intervals with irregular whorls of stiff spines, the points of which are turned upwards; the front lobe is twelve inches long, the two back lobes fourteen inches long, and diverged. The leaves are olive-green and prettily variegated. *John Heal, V.M.H.*

VEGETABLE GARDEN.

POTATO SHARPE'S EXPRESS.

I have grown this Potato for a number of years and it was a favourite early variety of a former employer. I wish to congratulate *A. P.* (page 202) upon his success. To obtain the very heavy crop of fourteen bushels of Potatos from fourteen pounds of seed sets is an achievement worthy of record. Evidently climate and soil were most suitable. The best tubers and largest crops I have seen were produced on warm, south borders. The soil was medium loam; farm-yard manure was dug in during the autumn, a dressing of ash from the garden bonfire forked in during the winter, and a top dressing of lime and soot applied previous to planting. I regret that records of the crops were not taken, but, although good, I am sure that the results were much below those recorded by *A. P.* The note would have been more interesting and instructive if the locality and nature of the soil had been given. Very fine crops of early Potatos are produced by growers for market near Dublin. The soil is light and sandy, and in many cases heavy dressings of seaweed are applied to the land.

THE ROOT STORE.

Owing to the excessive moisture in the atmosphere, the ripening and storage of Potatos, Onions, etc., will need much care this season. Potatos should be thoroughly examined and all damaged and diseased tubers removed. The tubers should be dry before being placed in store. When storing Potatos dust a little quick lime over them. After a period they should be inspected and defective tubers discarded, and during this operation it is advisable to pick out the large specimens for special culinary purposes. Main-crop Onions have been difficult to ripen thoroughly this year. As we have no suitable open shed available we have adopted the following method. The bulbs were placed on shallow, lattice trays and the trays arranged on inverted pots. During a sunny interval the trays were carried into a shed. The Onions were then sorted and placed in other trays and these were placed on inverted pots on the shelves of a dry, airy, store room. I have previously stored Onions on suspended wire netting. By these methods a free circulation of air is obtained. We have at present (September 20) Onions which were stored in September 1923 (a much better season). The largest Onions, the produce of seeds sown under glass, are frequently the most difficult to keep in good condition. *C. Ruse, Hyde Gardens, near Luton.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 78-84).

(*Continued from p. 254*).

ENGLAND, SOUTH.

Surrey (*continued*).—This is a record year for small fruits and Strawberries. The heavy rainfall during the spring and early summer just suited these crops as the soil is very shallow, the fruit garden and orchard being situated on a chalk hill. Plums and Pears are giving average crops, but the Apples are very poor, although the quality is good. *H. Prince, Polesden Lacey Gardens, Dorking.*

Sussex.—The crops of hardy fruits generally are very light indeed. The Pear trees bloomed profusely, but did not set well and the fruits are scabbed. The better varieties of dessert Apples showed very little bloom, but some of the culinary varieties flowered well, although only a few have set full crops. There has been much dropping of immature fruits. Early Victoria, Lord Grosvenor, The Queen, Bramley's Seedling, Early Julian, Royal Jubilee, and Lord Derby are good while Cox's Orange Pippin and Beauty of Bath are very short. Czar is the only variety of Plum carrying a full crop: River's Early Prolific and Belle de Louvain are light to moderate, and the remainder almost barren All kinds of soft fruits have done well, especially Black Currants and Gooseberries. Strawberries were above the average. The soil is a light loam with a subsoil of Hasting's sand. *E. M. Bear, Magham Down, Hailsham.*

— —Rarely indeed has there been such a display of blossom as that produced this spring upon all fruit trees except Plums, which bloomed sparsely and have given a poor crop. Apples in the grass orchards have set very thin and irregular crops, but those growing on cultivated land are carrying fine quantities of good, clean fruits. Apple trees generally have been infested with caterpillar which, in not a few instances, left the trees as bare of leaves as were many of the Oaks in this district. Pears in the open have a thin crop, but those growing on walls are bearing enormous crops of fine fruits. Peaches and Figs are quite equal to last year, but Apricots, which bloomed profusely, shed all their fruits. Strawberries were the worst crop for many years and Raspberries the best. Bush fruits are equal to the best crop during the past twelve years. *Ernest Markham, Gravetye Manor Gardens, East Grinstead.*

——Cherries and Plums on walls set their fruits badly, but Pears have a good crop. Some varieties of Apples set better than others. We had an abundance of Gooseberries, Red Currants, and Raspberries, and Strawberries were very good. Our soil is iron clay and very heavy. *E. Neal, Tilgate Gardens, Crawley.*

Wiltshire.—All crops promised well, but many varieties of Apples failed to set fruits. Plums on walls set well, but trees in the open failed. Cherries were better and Pears very good. Bush fruits were good, but Strawberries gave a light crop and of poor quality. All the best crops are on trees in positions sheltered from the north-west. Soil, loam on chalk. *H. H. Mills, Fonthill House Gardens, Tisbury.*

— — Pears generally are plentiful both on walls and in the open garden. Apples are exceedingly variable, amongst the best being King of the Pippins, Charles Ross, Bramley's Seedling, and Ecklinville. Some varieties have not a single fruit. Plums and Damsons were disappointing; we had plenty of blossom and a genial flowering period, but the fruits failed to set. Strawberries, Raspberries, and Loganberries were excellent, both in size and quality. Gooseberries, Red and Black Currants have been very plentiful. Peaches, Nectarines, and Cherries were average crops. All fruit trees are particularly clean this season, no spraying being necessary: perhaps the heavy rainfall during May (we registered 5·64 inches) will account for this. *J. Yandell, The Manor Gardens, Ramsbury.*

(*To be continued*).

MARKET FRUIT GARDEN.

September opened with nearly a week of fine weather, and a start was made with the much-needed work of cleaning the land by hoeing and horse cultivation. It was labour wasted, however, for unsettled conditions soon returned, and the ground was never again dry enough to touch. It was a most unpleasant month, cloudy, dull, and wet almost throughout, and with a good deal of strong wind. The rainfall amounted to 2.65 inches at my place.

We can only hope for a spell of "Indian summer" during October to enable fruit trees to ripen their sappy growth. Most varieties of Apples are still dark green in leaf, and the fruit of late kinds is very slow to colour.

Fruit Picking nearly Finished.

The harvesting of the crops draws all too rapidly to a close. There were practically no late Plums. I doubt if there were a dozen fruits of Monarch on the place, and Pond's Seedling and President did little better. My Plum harvest really finished with Belle de Louvain, which carried a moderate crop of very fine fruit, most of which was sold ripe in small chip baskets.

Amongst late Apples Bramley's Seedling occupied the pickers longest, some of the trees being laden almost to breaking point. Mid-season cooking Apples being exhausted, the marketing of Bramley's Seedling began before the end of September. I do not believe in storing cooking Apples when they are making nine or ten shillings a bushel. The chances are that they will make less between now and Christmas, and not more until February. Newton Wonder, also a good crop, is still on the trees awaiting more colour, this variety not dropping to any extent.

Late dessert Apples are very scarce with me. Two varieties bearing full crops, however, are Charles Ross and the old Sussex Apple Forge. Some very fine fruit of the former has been gathered and sold at a good price, but the rest looks as if it would never colour. Forge is a small Apple, very pretty when fully coloured, and of excellent flavour. It is a most prominent biennial bearer; and, as this is its "on" year, I made preparation with a heavy [dressing of meat meal last winter, followed by a dose of nitrate of soda in spring. The result is a better proportion than usual of full-sized fruit, in spite of the tremendous crop. Cox's Orange Pippin is very scarce indeed, and Allington Pippin light except on one small batch of trees in grass, which carries a full crop. Blenheim Pippin is scarce, but Baumann's Red Winter Reinette, of which I have only one row, has a full crop.

The cleanest, and in many cases the largest Apples, come from trees in grass land this season, which is generally the case in a wet year. Where the trees receive "sod strip" treatment, which means that the rows are in grass, but the alleys between are cultivated, the fruit is not so well coloured as where the whole of the ground is grassed.

Apple Scab.

For the second year in succession Apple Scab is very serious. No doubt it would have been worse still if no spraying had been done, but it could not have been very much worse. I sprayed twice; immediately after the fall of the bloom and again about a fortnight later. It is obvious that this is quite inadequate in such a wet season; but there are insects to spray for as well, and one cannot always be spraying. The use of fungicides in summer is, in fact, so liable to do a certain amount of harm that the tendency is to reduce it to the minimum. The orthodox full programme for scab prevention includes one spraying just before the opening of the bloom in addition to the two applications mentioned above. This is often omitted as being relatively unimportant. Now that Messrs. E. S. Salmon and W. M. Ware have discovered the true winter stage of the Apple and Pear scab fungi on the fallen leaves (*The Gardeners' Chronicle*, April 5 and May 10, 1924), it is probable that we ought to reconsider this opinion and attach more importance to the spraying done just before the opening of the bloom. At this time, if conditions are suitable, spores are being distributed from the fungus on the dead leaves of the previous season. The object of this spraying is to prevent an early attack of scab on the first leaves produced round the floral clusters, such as was seen last spring. Unfortunately we are generally engaged at this time in spraying against aphides. However, it seems likely that we may be able to escape the work by winter spraying with one of the new egg-killing washes which have undoubtedly given excellent results in many instances. In this case we can concentrate on scab prevention round about blooming time. Possibly we might kill two birds with one stone by means of "delayed dormant" spraying with lime-sulphur at winter strength with calcium caseinate. At Long Ashton Research Station this combination has been found to prevent the hatching of aphis eggs; and it is, of course, an excellent fungicide as well. The effect on aphis eggs needs confirmation from further tests. If this is forthcoming this would seem to be the most economical treatment.

Pears that Resist Scab.

Pears are even more disfigured by scab than Apples. The depreciation from this cause of what promised to be a valuable crop, taking the country as a whole, must be enormous. So general and severe is the attack that it is worth while to take special note of any varieties that have resisted it. If they have escaped this year they may surely be relied on at all times. In my garden the only varieties free from scab are Jersey Gratioli and Pitmaston Duchess. Beurré Hardy, which is usually clean, is badly scabbed this season.

Mine is not at all a good Pear district, and I have not hitherto attempted to grow any for market in consequence. In the autumn of 1921, however, I planted a small block of Fertility, to see if a coarser variety would succeed where the choicer kinds fail. The trees have grown well, and they are bearing quite a crop this season for the first time, and the fruit is free from scab. These trees were planted on the surface, without any holes being dug, the roots being covered with soil thrown up from the surrounding ground. I cannot tell whether this has helped them at all, as no control was arranged for.

It is more than probable that my brief list of scab-free varieties of Pears may not hold good for other districts, as there is always local variation in such matters.

Cob Nuts.

Kentish Cobs are a heavy crop with me, a piece of luck in a season when Apples and Plums are light. I had assumed that the same would be the case generally, or at any rate in Kent: but this can hardly be so, because the price has kept up fairly well. It is too bad, though, that the retailers should buy Cobs at 7d. per pound and sell them at 1s.

I do not know any other crop which fluctuates so much in yield and price. It has, however, the merit of turning up trumps sometimes in a bad season, as it has done this year with me. It is also, I believe, not particular as to soil, and may be planted where better subjects would not thrive.

A Pest-free Season.

I do not remember a season in which insect pests gave so little trouble. Aphides were hardly to be found on established Plums or Apples, and it is doubtful if the insecticide used before blooming was necessary. There was a late attack of permanent Apple aphis on newly-planted trees in July, but it was not at all severe, and was easily checked. American - blight appeared as usual, but made no headway, and has now almost disappeared. It seems reasonable to suppose that two wet seasons must have been very unfavourable for the root form of this pest. Wasps, which are a formidable pest when fruit is ripe, have been very scarce indeed. Not a single nest has been found on the place, where often there are dozens to be destroyed. Finally, it does not appear to me that Black Currant mite has spread at all this year. At any rate, the big buds cannot be detected yet; and they should be showing by now.

Storing Apples.

I do not think the Apples will keep well this year. The larger specimens, at any rate, look unhealthy about the core in many cases. They are hollow, and with almost a mouldy look about the carpels and pips. Last year's fruit kept exceptionally well. I used the last of Bramley's Seedling in July. They were stored in a cellar, which is the best place for the purpose, the moist air and even temperature being very favourable to keeping. I believe the Apples should be stored away as soon as possible after they are picked. If they stand about in a dry and draughty place they do not seem to keep so well. They do best in boxes holding about a bushel. If there is anything special about them it is well worth while to wrap each fruit in tissue paper, just as imported Apples are treated. I believe that wrapping, boxing, and placing promptly in a cellar represents the ideal storage method. *Market Grower.*

HARDY FRUIT GARDEN.

THE VEITCHBERRY.

Being privileged just recently to see this new hybrid fruit growing at Messrs. Laxton's Nursery, and also to sample its fruits I felt constrained to make a note of it as a "berry" to be desired. In colour the fruit much resembled a ripe Mulberry, only it is larger, say about twice the size of a Blackberry. The flavour is good and may be described as a combination of the Raspberry and the Blackberry—which fact is not to be wondered at seeing one of the parents is November Abundance Raspberry and the other a Blackberry. In habit it is semi-erect, strong-growing, and bears the features of both parents. It is self-fertile and sets its fruits freely—these coming into season between those of the Raspberry and the Blackberry. Like the best of other hybrid berries, the Veitchberry makes good jam and cooks well. *C. Turner.*

CANKER IN APRICOTS.

Has any fruit grower discovered the cause of the prevalence of canker in Apricot trees? or, can any grower give definite instructions concerning the cultivation of this fruit whereby canker may be prevented? Many theories have been put forward as to the cause—dryness at the roots, stagnant soil, damaged bark, unsuitable atmospheric conditions, etc. Bad cultivation will cause canker and other diseases in fruit trees other than Apricots, but the results are not so disastrous.

The loss of large branches from a well-trained Apricot tree is distressing. Perfect specimens of old trees are sometimes seen under ordinary cultivation, but I think such cases are rare. I have been told by a well-known grower that the variety Kaisha is not so liable to canker as others, but I have no personal experience of this Apricot.

The most successful method of growing Apricots under glass (other than in pots) which I have seen, was as cordons. The best trees I have known outside were on a south wall on a raised border. The soil was sandy loam, with which had been incorporated a large quantity of chalk before the trees were planted. After the trees became established chalk was applied as a top dressing, whenever this was deemed necessary. The chalk was largely used upon the principle that it was an aid in the production of healthy root action, and in consequence clean, healthy trees.

Particular care should be taken when training Apricot trees, as damage to the bark will produce gumming, and canker will often follow. As the Apricot commences to grow very early in the year the borders should be examined early in February, and if the subsoil is dry water should be applied. A casual inspection of the surface soil is often deceptive, as this is often quite moist while the soil below is quite dry. *Colin Ruse, Hyde Gardens, near Luton.*

HARDY FLOWER BORDER.

VIOLA SAUGHTON BLUE.

I only made the acquaintance of this hardy Viola a few days ago. Probaby the varietal name indicates its origin, but that matters little with such a good variety. Its compact growth is a great point in its favour. It bears a great number of medium-sized flowers, which are of a brilliant blue shade with a purplish centre. It should prove a good plant for the border, for bedding, or for the rock garden. *S. A.*

HOME CORRESPONDENCE.

Sugar Peas.—In his interesting note on Sugar Peas (see p. 218), Mr. Beckett gives the meaning of Mangetout as "prodigal." My late employer who lived in Paris for several months each year used to state that the word Mangetout meant "eat all"; in other words, you are able to eat pod and Peas together, as there is no parchment inside the pod. When my former employer was alive I grew these Sugar-podded Peas yearly. *J. Pitts.*

[The literal translation of *Mangetout*, as given in that popular book of reference, Cassell's *French-English and English-French Dictionary*, is "prodigal, spendthrift, squanderer," but it would appear that when the word *Mangetout* is used as an adjective applied to that section of Peas in which the pods lack parchment (*sans parchemin*) the word is compounded from the verb *manger*, to eat, and *tout*, whole or all, and thus suggests the fact that these Peas may be eaten wholly, pod and all. What does Dr. Durham say?—EDS.]

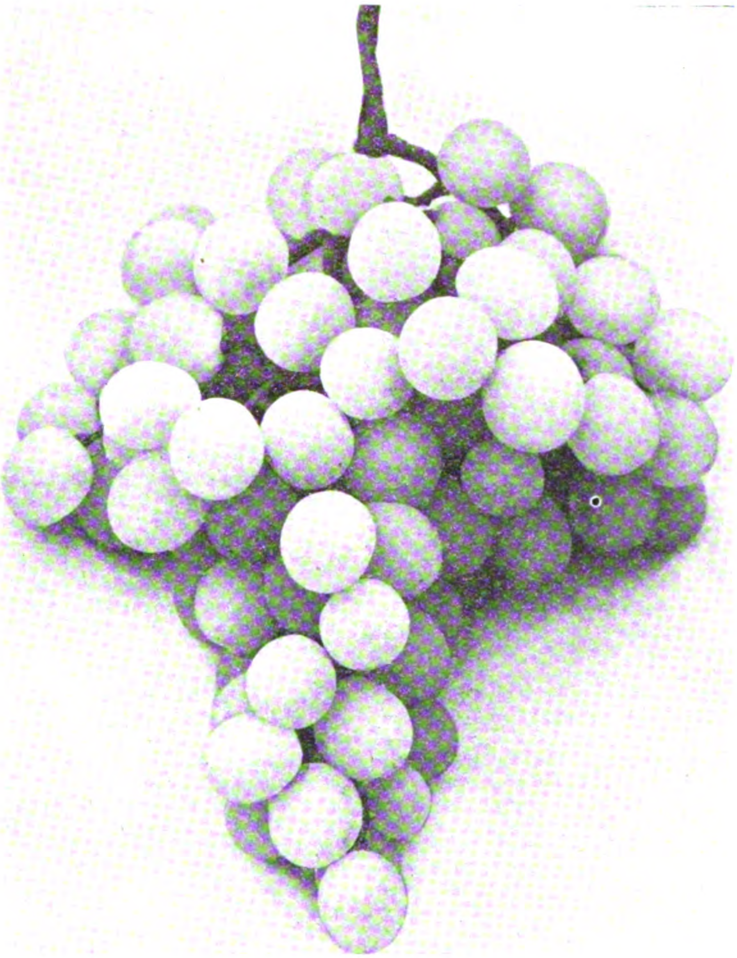


FIG. 98.—GRAPE COTE HOUSE SEEDLING.

R.H.S. Award of Merit, September 23 (see pp. 189, 223 and 256).

The Proposed Royal Horticultural Society's Hall.—I had several conversations at the Holland Park Hall on the subject of the proposed new R.H.S. Hall. No one seems to know much about it, but I found those with whom I discussed the matter thought it would be of little or no use for shows unless it was at least as large as the Holland Park Hall. One person said he understood it would only be one-third of the size. If this is so, may I ask those in authority what use it will be and if we may know the real facts of the case? also, how much money it is likely to cost? *Joseph Jocob.*

Oxalis obliqua.—Although this Oxalis may be a terrible pest if grown in the wrong place, as it spreads so rapidly in any free, warm soil, it is, nevertheless, a species of outstanding beauty and one which should always be afforded hospitality in the woodland, margin of shrubbery, or other safe place. The flowers come in spring in bold clusters on eight-inch stems, and they are of large size and a vivid rosy purple colour. The leaves, which begin to appear before the blooms, continue to develop throughout the summer, and by the end of the season they will make a dense carpet of soft, olive green, each segment of the trefoils being adorned with a conspicuous purple crescent. In well-grown plants these leaves will reach the height of eight inches or nine inches, the trefoil often being nearly three inches across, and before dying down they assume gay autumn tints. *N. Wales.*

The Apricot and Dioscorides,—In the last issue of your always delightful publication, the Rev. Hilderic Friend states in his interesting note upon "Garden-Craft in the Canticles" (p. 235), writing of the Apricot:—"There seems to be little doubt that the tree is a native of China, and that it travelled west in early times. It reached America many ages ago, and was looked upon by the old Greek botanists, such as Dioscorides as being a native of that country." It would be still more interesting if your learned contributor would give your readers the exact terms in which Dioscorides or any other botanist of about the same period referred to America in this matter of the Apricot or any other plant. *J. E. Shaw.*

SOCIETIES.

ROYAL HORTICULTURAL.

(*Continued from p. 255*).

SINGLE DISHES OF APPLES.

IN the following classes for specified varieties of dessert Apples six fruits were required. First prizes were won by CANON LEIGH, Yalding Vicarage, Kent, with Adams's Pearmain and American Mother; in each class there were three dishes. W. TAYLOR, Esq., Grinshill, Shrewsbury, had the best Allington Pippins. The four dishes of Ellison's Orange were all highly coloured; T. JONES, Esq., won the first prize. W. H. MYERS, Esq., was first with Blenheim Pippin. The best of eleven dishes of Charles Ross was shown by J. H. VIRGO, Esq. There was only one dish of Claygate Pearman, for which Mr. T. JONES was awarded the second prize. Cox's Orange Pippin of high merit was shown by ten exhibitors; Viscount HAMBLEDON won the first prize. Mr. E. EVANS was first with Egremont Russet, and J. H. VIRGO, Esq., had the best of three highly coloured dishes of James Grieve. Mr. J. A. STIDSTON was first with Lord Hindlip and the EARL OF BESSBOROUGH was similarly successful with Margil. Of the ten dishes of Ribston Pippin the best was shown by Mr. W. TAYLOR, while Viscount HAMBLEDON was first with Rival of which there were seven dishes, all beautifully coloured. Gasgoyne's Scarlet of glorious colour was shown by six competitors; the best was from the EARL OF BESSBOROUGH. Mrs. ARTHUR WILSON was first with St. Everard. Mr. J. A. STIDSTON with the only dish of King's Acre Pippin was awarded the first prize. Mrs. AUSTEN was first with Sturmer Pippin, and in the class for any early variety not named above Mrs. CORDEAUX was first with Coronation in a class of twelve dishes. King of Tompkin's County shown by T. SHERRARD, Esq., was the first prize late Apple not named above.

In the classes for cooking Apples the competition was only moderately good. Mr. C. GRIFFIN was awarded the first prize for the only dish of Beauty of Kent. Of the five dishes of Bismarck the best was shown by Mr. R. STAWARD. Lady MARY MORRISON was first with Blenheim Pippin and Peasgood's Nonesuch. Mrs. CORDEAUX had the best of eleven dishes of Bramley's Seedling and was also first with Emneth Early. Viscount HAMBLEDON was first with Dumelow's Seedling and Rev. W. Wilks. The best Ecklinville Seedling was shown by A. H. PULLIN, Esq. Capt. CHALMERS HUNT was first with King Edward VII.

Neither Norfolk Beauty, Crawley Beauty nor Golden Noble were represented, but there were nine dishes of Lane's Prince Albert; the first prize was won by F. J. LONG, Esq. The EARL of BESSBOROUGH was first with Grenadier. Canon LEIGH won first prizes for Lord Derby, Newton Wonder and Warner's King. The best Golden Spire was shown by J. A. STIDSTON, Esq., who was also first with Stirling Castle. Of six dishes of The Queen the best was shown by R. C. STAPYLETON, Esq. The two dishes of Annie Elizabeth were very unlike; the first prize was awarded to EARL BEATTY. Gascoyne's Scarlet, in a class of twelve dishes, was first for any variety not named above.

DESSERT PEARS.

Only one dish of Beurré d'Anjou was shown, and Mr. J. LOCK was awarded the first prize. There was no first for Beurré Bosc. The Hon. Mrs. LYTTLETON had the best of three dishes of Beurré Hardy, and Lady MARY MORRISON was first with Beurré Superfin and Emile d'Heyst. Of the seven dishes of Conference the best was shown by Mr. R. STAWARD, who was also first with Thompson's and Winter Nelis. Mr. J. LOCK had the best of five dishes of Durondeau, and of four of Marguerite Marillat. There was no first prize awarded for Glou Morceau. The Earl Beatty was first with Fondante d'Automne. Of eight dishes of Louise Bonne of Jersey the best was shown by Viscount Hambledon, who also showed the best of five dishes of Pitmaston Duchess. Mr. W. Taylor had the best dish of Marie Louise. Triomphe de Vienne shown by Lady Mary Morrison, was first in the class for any early variety not named above. The best similar late variety was Beurré Diel shown by Mrs. Austen.

In the classes for flavour the first prize Pear was Souvenir du Congres, shown by Mrs. Austen, while The Houblon, shown by Viscount Hambledon was selected as the best Apple.

Affiliated Societies' Class.

The Affiliated Societies' Challenge Cup, offered for the best collection of six dishes of cooking Apples, distinct varieties, six dishes of dessert Apples, distinct varieties, and six dishes of dessert Pears, distinct varieties, was won by the North Walsham and District Horticultural Society, with a very fine collection, which included particularly good specimens of Worcester Pearmain, Cox's Orange Pippin and Lane's Prince Albert Apples; and Marguerite Marillat, Pitmaston Duchess and Triomphe de Vienne Pears. This competiton is open only to societies in affiliation with the Royal Horticultural Society, and the Challenge Cup is held by the winners for one year only. The Silver-gilt Hogg Medal is added to the cup award.

The second prize, a Silver-gilt Hogg Medal, was won on this occasion by the East Anglian Horticultural Club, a body which has won the premier honour on several previous occasions.

Vegetable Classes.

In the premier class for twelve distinct kinds of vegetables, selected from a specified list, there were four entries, and competition was exceptionally keen. The first prize, which included the Sutton Cup and a cash prize of £10, was deservedly gained by Major A. Pam, C.B.E. (gr. Mr. F. Streeter), Wormley Bury, Broxbourne, who staged a perfect selection, his dishes of Acquisition Leek, Selected Ailsa Craig Onion, Early Giant Cauliflower, and Arran Comrade Potato being perfect. The other items in this collection were Perpetual Pea, New Red Intermediate Carrot, Dwarf Gem Brussels Sprouts, Rochford Market Cucumber, Tender and True Parsnip, Sutton's Black Beet, Sutton's Superb Pink Celery, and Best of All Tomato, all of which were excellently grown. Viscount Hambledon (gr. Mr. W. Turnham), Greenlands, Henley-on-Thames, was second, and had good dishes of All the Year Round Cauliflower, Prizewinner Runner Bean, Solid White Celery, and Gladstone Pea. The third prize was won by Mr. W. Taylor, Grinshill, Shrewsbury.

The class for nine distinct kinds of vegetables attracted seven competitors. The object of this class is to illustrate not only those vegetables which are in daily use, but especially the quality and size in which they are most acceptable for table use. Mrs Jenner (gr. Mr. H. Wheeler), Wenvoe Castle, Cardiff, won first place with the following selection: Snowdon Cauliflower, Golden Ball Onion, Arran Comrade Potato, Aviator Tomato, Gladstone Pea; Colossal Runner Bean, Prize White Celery, Exhibition Brussels Sprouts, and Matchless Carrot. There was not a weak specimen in this collection which was deserving of outstanding praise. W. H. Myers, Esq. (gr. Mr. G. Ellwood), Swanmore Park, Bishops Waltham, followed closely, his Cauliflowers, Tomatos, Peas, Runner Beans and Carrots being first-rate. Third, R. Chetwynd Stapylton, Esq. (gr. Mr. W. Meoger), Headlands, Gt. Berkhamsted.

For a collection of six distinct vegetables, Mr. Joseph Day, Queens Road, Berkhamsted, was easily first with faultless produce; he showed Ailsa Craig Onion, King Edward Potato, Red Elephant Carrot, Early Giant Cauliflower, and Aldenham Pink Celery. The Rev. J. G. Wyatt (gr. Mr. J. E. Shirley), Horley, Surrey, was second, and G. Thorn, Esq. (gr. Mr. M Hoad), Wellesborough, Kent, third. There were four entries.

W. H. Henderson, Esq. (gr. Mr. F. L. Pike), West Woodhay, Newbury, excelled in the class for twelve distinct kinds of Potatos. The tubers were very large and clean and were principally of the kidney type. Of coloured varieties were Red King, Arran Rose, and King Edward, while white-skinned varieties were represented by Irish Hero, Crusader, Longkeeper, Majestic, Sharpe's Express, Up-to-Date, Advance, and Arran Chief. The second prize was gained by Sir Chas. Nall-Cain (gr. Mr. T. Pateman), Brocket Hall, Hatfield, who had a representative collection and showed excellent specimens of Arran Comrade, Warwick Castle, Arran Victory, Rhoderick Dhu, and The Bishop. The third prize went to G. Thorn, Esq., who showed fine samples of White City, Di Vernon, and Abundance. There were seven entries.

In a similar class for six dishes of immune varieties, Canon J. R. Leigh (gr. Mr. G. Johnson), Yalding Vicarage, Kent, was first in this very keenly contested class. Great Scot, Majestic, The Ally, Arran Comrade, and the two coloured roots Kerr's Pink and Mr. Breese, were the varieties shown. Mrs Jenner and Sir C. Nall-Cain were second and third respectively, and each had an excellent collection. There were ten entries in this class.

For a collection of six Onions, Mrs. Jenner led with a magnificent display, the specimens of Ailsa Craig and Premier being of mammoth size. The other varieties were Golden Ball, Royal Keeper, Silver Globe and Crimson Globe, which were all of perfect shape and size and excellently grown. Viscount Hambledon was second, and V. C. Vickers, Esq. (gr. Mr. W. Watkins), Newsells Park, Royston, third.

Viscount Hambledon was the first out of four competitors in the class for six salad vegetables; he showed Iceburg Lettuce, Best of All Tomatos, Mustard and Cress, Delicacy Cucumber, Black Beet and Celery. Major A. Pam, C.B.E., was a close second, and exhibited an excellent batch of Ideal Lettuce in his collection, while the third prize went to W. H. Myers, Esq.

Single Dish Classes.

The following were the first prize-winners in the single-dish classes.

Beans, Scarlet Runners.—Earl Beatty (gr. Mr. A. Barrett), Reigate Priory, with the variety Best of All. Twelve entries.

Beans, Climbing French.—Mrs. Wallis Toller (gr. Mr. G. Crabb), Weybridge, with the variety Princess of Wales. Two entries.

Beans, Dwarf French—Mrs. Wallis Toller, with the variety Canadian Wonder. Four entries.

Beet, Globe.—F. C. Stoop, Esq. (gr. Mr. G. Carpenter), West Hall, Byfleet, Surrey, with the variety Crimson Globe. Ten entries.

Beet, Long. F. C. Stoop, Esq., with the variety Cheltenham Green-top.

Brussels Sprouts.—Mrs. Jenner, with the variety Exhibition.

Cabbage.—No first prize awarded.

Savoy Cabbage.—Mrs. Austin (gr. Mr. E. J. Langhurst), Totteridge, with Dwarf Green Curled. Two entries.

Cauliflowers.—No first prize awarded.

Celeriac.—Sir Chas. Nall-Cain. Three entries.

Celery, White.—Mrs. Farnham (gr. Mr. J. Benningtan), Witley, Surrey, with the variety White Queen. Three entries.

Celery, Pink.—Sir Chas. Nall-Cain, with the variety Major Clarke. Six entries.

Cucumbers.—W. H. Myers, Esq., with the variety Ideal. Four entries.

Leeks.—Mr. W. C. Phillips, Wood Green, N., with the variety Musselburgh. Six entries.

Vegetable Marrows.—The Rev. T. G. Wyatt, with the variety Long Green. Seven entries.

Onions.—Mrs. Jenner, with the variety Premier. Eight entries.

Parsnips.—Mr. W. H. Tyzack, High Wycombe, with the variety Tender and True. Nine entries.

Carrots, Long.—Mrs. Jenner, with the variety Perfection. Twelve entries.

Carrots, Short.—W. H. Myers, Esq., with the variety Sutton's Favourite. Twelve entries.

Peas.—Sir Chas. Nall-Cain, with the variety Gladstone. Nine entries.

Turnips, White-Fleshed.—Mrs. Jenner, with the variety Snowball. Sixteen entries.

Turnips, Yellow-Fleshed.—Mrs. Jenner, with the variety Golden Ball. Five entries.

Potatos, White.—Mr. W. H. Tysack, with the variety Stirling Castle. Ten entries.

Potatos, Coloured.—G. Thorn, Esq., with the variety Di Vernon. Nine entries.

Tomatos, Red.—G. Thorn, Esq., with the variety Britain's Best. Fourteen entries.

Tomatos, Yellow.—Earl Beatty, with the variety Golden Queen.

Any other Vegetable.—Sir Charles Nall-Cain, with Improved Indian Corn.

The R.H.S. Cup for Vegetables, for the competitor who secured the greatest number of first prize points was awarded to Mrs. Jenner.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

The series of winter lectures was resumed on Wednesday night when Mr. John Main, F.E.I.S., addressed a large meeting in the Christian Institute, on "Our Glasgow Parks." By means of lantern illustrations he showed the beauty spots at Ardgoil and Balloch, and some of the interesting subjects that are to be seen in the parks within the City area. Mr. Main mentioned that the thirty-one parks covered an area of 2,700 acres, and that Glasgow Green was the oldest and most historic. It was gifted to the Archbishop of Glasgow 500 years ago and was acquired by the City in 1764. It was on the Green that the Regent's army assembled for the battle of Langside, and in this connection opportunity was taken to correct a common misconception on the part of the public that Queen's Park was called after Queen Victoria, whereas it took its name from Mary, Queen of Scots.

A choice collection of seedling Chrysanthemums and Dahlias was staged and the following awards were made:

First-Class Certificates.—*Chrysanthemums Mary A. Houston and Euphie Ritchie*, raised by Mr. Alexander McAlpine, Tollcross; *Dahlia Sunset* and *Chrysanthemum Golden Ritchie*, a sport from William Ritchie and much deeper in colour, shown by Messrs. Torrance and Hopkins, Bushy.

Awards of Merit.—*Dahlias Intense and Dunecht Gem*, and *Chrysanthemums Innocence and Snowdrift*, shown by Messrs. Torrance and Hopkins, and *Chrysanthemum Janet Wyper*, shown by Mr. Alex. McAlpine.

READING AND DISTRICT GARDENERS.

The first fortnightly meeting of the autumn session was held in the Abbey Hall on Monday, Sept. 29 last, when there was a record attendance, testifying to the great popularity of the Association. The President, Mr. Councillor Frank E. Moring, presided.

The subject for discussion, "Dahlias," was introduced in an interesting and illustrated lecture by Mr. A. J. Cobb, Lecturer in Horticulture to the Reading University College. He dealt chiefly with the various types and their uses from the original species down to the latest developments. The first was the Show type, and enthusiasm for it reached such a tremendous height at the shows that police were requisitioned to guard the blooms. Then followed the Pompon group, very popular with many for their dainty little flowers. In 1872 came the Cactus sorts, in 1880 the Singles, in 1899 the Collerettes, the first of the modern type; following these came the Paeony-flowered, Decorative, Star, dwarf Single and miniature Paeony-flowered sorts, these last being, in the opinion of the lecturer, the finest of all the types. Mr. Cobb referred to the fact that the Decorative Dahlia was at the moment a popular and fashionable flower in Holland. They were to be seen everywhere in the shop windows of various trades, in the rooms and windows of private dwellings, in hotels and restaurants, in the markets, florists' shops, on the street, sellers' barrows, in parks and in gardens. In the United States of America also, Dahlias are immensely popular both for cutting and garden purposes.

The Dahlia is really indifferent as to the kind of soil. It will succeed in sand, clay, or loam, but the land should be deeply dug. It needs little manure but plenty of water is essential.

Time only allowed for a short discussion and this ran on types and varieties.

In the competition for three vases of flowers, distinct kinds, there were eight entries, and the twenty-four vases made an excellent show and provided a keen competition. The result was as follows:—First, Mr. H. Wynn, The Gardens, Queen's House, Goring Heath (Larkspurs, Chrysanthemums and Marigolds); Second, Mr. J. Wynn, The Gardens, Hammonds, Checkendon (Roses, Daisies and Marigolds); Third, Mr. A. H. Fulker, The Gardens, Elmhurst, Reading (Michaelmas Daisies, Dahlias and Pentstemons).

In the class for eighteen Runner Beans there were four entries and some splendid specimens were shown for so late in the season. The first prize went to Mr. J. Wynn, second to Mr. F. Alexander, The Gardens, Kennett's Lodge, Theale, and third to Mr. H. Wells, Reading.

In the non-competitive section a First Class Certificate was awarded to Mr. C. J. Howlett, The Yews, Earley, for Figs in pots, and an Award of Merit for six dishes of Apples. Mr. A. H. Fulkes also received a First Class Certificate for a collection of Michaelmas Daisies in pots, illustrating the value of this autumn flower for the decoration of the conservatory.

Other exhibits were:—Savoy Cabbages, from Mr. E. Iles, seedling Dahlias, from Mr. F. Alexander, three vases of Dahlias, from Mr. L. Iles, and a beautiful scarlet seedling Dahlia from Mr. W. Chislett, Bill Hill Gardens, Wokingham.

Six new members were elected.

THE ORCHID CLUB.

The first meeting of The Orchid Club in the session 1924 to 1925, held in Manchester on October 10, was well attended by members and friends and was the occasion of an excellent display of well-grown plants, including many choice and interesting varieties. Two new members were elected.

Awards.

Premier Diploma.

Cypripedium Viking, from Dr. Craven Moore, a superb flower of this chaste and well-known Westonbirt hybrid.

Diploma of Merit.

Odontoglossum crispum, var. Mollah, from Mrs. Fred Hardy. A very fine white crispum. The round flowers are four inches in diameter, the segments well overlapped, white with a faint rose flush on the sepals; the lip is well formed and marked with two or three brown spots. The plant carried a full spike of ten flowers.

Cultural Commendation.

Cypripedium Charlesworthii, Cloudeslee var., to F. T. Paul, Esq. The plant was in a four-inch pot and carried five large and perfect blooms.

Groups.

Mrs. Fred Hardy, Ashton-on-Mersey, exhibited a few choice Odontoglossums, including a fine variety of Princess Yolande carrying three small spikes, and excellent white crispums. Dr. Craven Moore, Manchester (gr. Mr. C. Branch) showed a large group of choice Cypripediums including Viking, Bianca, Maudiae Bank House var., the Chardwar San-actæus, Sibyl superbum, argo-Fairrieanum, Chardwar var., Budhoni, etc., together with fine forms of Cattleya Adula, and excellent blotched Odontoglossums.

A. T. Cussons, Esq., Kersal (gr. Mr. F. Cookson), staged an interesting group, including a beautifully flowered pan of Pleione lagenaria, Oncidiums ornithorhynchum and Forbesii, and various Cypripediums, prominent amongst which was a specially fine var. of C. Maudiae. B. J. Beckton, Esq., Irlams (gr. Mr. W. A. Stewart), exhibited an interesting assemblage of miscellaneous Orchids; amongst them were fine examples of Oncidium haematochilum, Pleurothallis astrophora, Cirrhopetalum miniatum, Vanda Kimballiana, Angraecum Kirkii, Coelogyne sulphurea, and selected Cypripediums.

ROYAL HORTICULTURAL.

Trial of Early Potatos.

The following awards have been made to First Early Potatos by the Royal Horticultural Society after trial at Wisley.

Awards of Merit.

Duke of York, sent by Messrs. Daniels Bros., Norwich. This variety was also sent as as O.K. Seedling by the Garden Supplies, Ltd and *Midlothian Early* by Messrs. Dobbie and Co., Ltd.; *Immune Ashleaf*, sent by Messrs. Dobbie and Co., Ltd., and Messrs. W. H. Simpson and Sons; and *Sharpe's Express*, sent by Messrs. Dobbie and Co., Ltd., the Garden Supplies, Ltd., and Messrs. W. H. Simpson and Sons.

Highly Commended.

Dargill Early, sent by The Garden Supplies, Ltd.

Commended.

Early Pink Champion, sent by Mr. D. Findlay.

The varieties Immune Ashleaf, Dargill Early and Early Pink Champion are immune from Wart Disease.

Trial of Sweet Peas.

The following awards have been made to Sweet Peas by the Royal Horticultural Society after trial at Wisley.

Awards of Merit.

Flowers White: *Joan Ryder*, sent by Messrs. Ryder and Son, Ltd.; *King White*, sent by Messrs. J. K. King and Sons; *Mascotts White*, and *Edna May Improved*, both sent by Messrs. Ireland and Hitchcock; and *Constance Hinton*, sent by Messrs. A. Dickson and Sons, Ltd., Messrs. Dobbie and Co., Ltd., and Mr. W. J. Unwin. The varieties King White, Mascotts White and Edna May Improved are much alike.

Flowers Cream: *Cream Constance Hinton*, sent by Dr. H. T. Hinton; *Matchless*, sent by Messrs. Dobbie and Co., Ltd., and Messrs. Ireland and Hitchcock; *Majestic Cream*, sent by Mr. W. J. Unwin; *Hawlmark Cream*, sent by Messrs. A. Dickson and Sons, Ltd.; and *Paradise Ivory*, sent by Messrs. J. Kelway and Son. The varieties Majestic Cream and Hawlmark Cream are much alike.

Flowers Crimson: *Charity*, sent by Mr. J. Stevenson, Mr. W. J. Unwin, Messrs. J. K. King and Sons, Messrs. Ireland and Hitchcock, Messrs. Barr and Sons and Messrs. R. Veitch and Son: *Unwin's Crimson*, sent by Mr. W. J. Unwin; the last two varieties are much alike. *Crimson King*, sent by Messrs. C. Morse and Co., Messrs. Dobbie and Co., and Messrs. E. Webb and Sons, Ltd.; the last-named firm sent this variety under the name of Field Marshal; *Maud Holmes*, sent by Messrs. Barr and Sons, and *Sunproof Crimson*, sent by Messrs. Dobbie and Co., Ltd., and Messrs. J. Kelway and Son. These last two varieties are much alike.

Flowers Maroon: *Warrior*, sent by Messrs. Dobbie and Co., Ltd., Mr. W. J. Unwin, Messrs. A. Dickson and Sons, Ltd., Messrs. W. H. Simpson and Sons, Messrs. J. K. King and Sons, Messrs. E. Webb and Sons, and Messrs. Ireland and Hitchcock; *Nubian*, sent by Messrs. J. Kelway and Son; and *Maroon King*, sent by Mr. F. C. Woodcock. These three varieties are much alike.

Trial of Scabious.

The following awards have been made by the Royal Horticultural Society to annual Scabious after trial at Wisley.

Awards of Merit.

Snowball, sent by Messrs, R. Veitch and Son, and Messrs. L. Daehnfeldt, Ltd.; *Bright Crimson*, sent by Messrs. W. H. Simpson and Sons; *Black King*, sent by Messrs. Barr and Sons, and *Azure Fairy*, sent by Messrs. Dobbie and Co., Ltd.

Highly Commended.

Dwarf varieties: *Dwarf Rosy Lilac* and *Dwarf Blue*, sent by Messrs. Nutting and Sons, Ltd.; *Peter Pan*, sent by Messrs. R. Veitch and Son; and *Dwarf Reddish Black*, sent by Messrs. Nutting and Sons, Ltd.

Medium varieties; *Rose Queen*, *Cerise Queen*, *Crimson Queen*, *Azure Queen*, *Purple Queen*, and *The Sultan*, all sent by Messrs. A. Dickson and Sons, Ltd.

Tall varieties: *Treasure*, sent by Messrs. R. Veitch and Son; *Fire King*, sent by Messrs. Watkins and Simpson, Ltd.; *Fairy*, sent by Messrs. Barr and Sons; *Azure Fairy*, sent by Messrs. L. Daehnfeldt, Ltd.; *Crimson and White* and *Pompadour*, sent by Messrs. Dobbie and Co., Ltd.; *Large-Flowered Black*, sent by Messrs. J. Carter and Co.; *Bedding Strain Improved*, sent by Messrs. Barr and Sons and *Flesh Pink*, sent by The Waller Seed Co.

The following varieties were regarded as being much alike; Bright Crimson, Treasure and Fire King; Azure Fairy and Fairy; Pompadour and Large-flowered Black.

NORTHERN COUNTIES FRUIT SHOW AND CONGRESS.

The tenth show of the Four Northern Counties Society was held at Hexham, Northumberland, on September 30th and October 1st, and proved to be one of the best seen in the north. Not only were the different classes well filled, but the quality of the exhibits was most remarkable, especially when the unfavourable weather of the past season is taken into account. The arrangements of the show were well carried out by Mr. W. Anderson, gardener to Lady Knott, Close House, Wylam, and an excellent committee of workers. The judges' duties were carried out by Mr. Lobjoit, of the Ministry of Agriculture, and Mr. Seabrook, of Chelmsford, for fruit, and Messrs. Cook and Glover, of the Ministry of Agriculture, for Potatos.

In the class for twelve dishes of fruit (eight Apples, two Pears, and two Plums), for which the W. D. Crowdson Challenge Cup was offered, Mr. J. Millican, Scotby Lane, Carlisle, was placed first, with fine examples of Cox's Orange Pippin, Worcester Pearmain, Newton Wonder, Royal George, Lord Derby, Lane's Prince Albert, Prince Bismarck, and Bramley's Seedling Apples;

Pitmaston Duchess and finely coloured Clapp's Favourite Pears, Coe's Emperor and Victoria Plums. Lady Knott, Close House, Wylam, was a very close second, the Ribston Pippin and Emperor Alexandra Apples being particularly fine in her collection.

For a table of dessert fruit, six dishes, with floral arrangments, Lady Knott won first prize. The floral arrrangements consisted of vases of Montbretia with a ground-work of Asparagus Sprengeri, and the fruits consisted of fine bunches of Muscat of Alexandria and Prince of Wales Grapes, Dymond Peach, Jefferson's Plum Lady Sudeley Apple and Clapp's Favourite Pear; second, Lady Rayleigh, Beaufront Castle, Hexham (gr. Mr. MacLaren), whose table was far too heavily decorated for the four feet space allowed.

In the open class for market growers, for one box each of cooking and dessert Apples, the Collinson Challenge Cup and first prize were awarded to Mr. W. Watson, Carlisle, for the varieties Bismarck and Worcester Pearmain; second, Messrs. W. Britton and Sons, Langworthy, with Bramley's Seedling and Worcester Pearmain. For a half sieve of cooking Apples, Mr. J. Millican led with Worcester Pearmain; Messrs. Britton and Sons, second, and Mr. W. Walton, third.

For a half-sieve of cooking Apples Mrs. Alexander, Hexham, led with good specimens of Ecklinville; Mr. Walton, second, and Mr. J. Millican, third.

For three dishes of Apples, two cooking and one dessert, Mr. J. Millican won first prize with Bramley's Seedling, Bismarck and Worcester Pearmain; second, Messrs. Britton; third Mrs. Alexander.

The Silver Cup given by Col. J. L. Marr, for two dishes of cooking Apples, two dishes of dessert Apples, one dish of cooking Pears, and one dish of dessert Pears, was won by the donor's gardener, Mr. R. H. Lardler, who showed fine fruits of Lord Suffield, Ecklinville, Irish Peach, and Worcester Pearmain Apples, and Calebasse and Jargonelle Pears; second, Mr. Whiteley, Silksworth House, Sunderland.

In the classes open to gardeners and amateurs the T. D. Straker-Smith Cup was offered for the best 12 dishes of fruit, distinct varieties. It was won by Lady Knott with excellent dishes of Peasgood's Nonesuch, Emperor Alexander, Lord Derby, Rev. W. Wilks, Worcester Pearmain, Lady Sudeley, Charles Ross, The Queen, and Gascoigne's Scarlet Apples, and Clapp's Favourite and Pitmaston Duchess Pears; second Mrs. N. G. Clayton, The Chesters, Stamshaugh (gr. Mr. Cocker). For six dishes of dessert Apples, distinct varieties, Mr. S. Moor, Hexham, led showing Lady Sudeley, Worcester Pearmain, Ellison's Orange, Ribston Pippin and Irish Peach in fine condition; second Lady Rayleigh; third Lady Knott. For six dishes of cooking Apples Mr. Moor was again first prize winner with Peasgood's Nonesuch, Warner's King, Bramley's Seedling, Rev. W. Wilks, Lord Suffield, and Lord Derby; second Sir T. W. Chance, Morton, Carlisle (gr. Mr. W. Hodgson); third, Lady Rayleigh.

The best two bunches of Black Grapes were shown by Mrs. N. C. Clayton, who had Muscat Hamburgh in grand condition; second, Mr. C. Kent, Hexham; third, E. C. Straker, Esq. (gr. Mr. Lamberton). In the class for two bunches of White Grapes, Mrs. Clayton again led with Muscat of Alexandria; Mr. Kent, second; Mr. E. C. Straker, High Warden, Hexham, third.

Lady Knott had the best dish of Peaches —Dymond; second, Col. Kush, Sanlor, Hexham (gr. Mr. Cannell); third Mr. Kent. For three dishes of Pears (distinct), Lady Knott led; Lady Rayleigh, second. Lady Knott was also the winner for a single dish of Pitmaston Duchess Pear, and also led in the class for "any other Pear," showing finely coloured fruits of Clapp's Favourite.

The Mrs. Benson Silver Trophy for six dishes of Apples (distinct), was won by Sir T. W. Chance, who exhibited good dishes of Worcester Pearmain, Lady Sudeley, Blenheim Pippin, Charles Ross, Bramley's Seedling, and Peasgood's Nonesuch; second, Mr. S. Moor; third, Mr. W. Plant, The Hermitage, Hexham.

The Silksworth Cup for two dishes each of dessert and cooking Apples, and two dishes of Pears, was won by Mr. J. Robinson, Barn Hall, Durham, with Lord Suffield, Ecklinville, Charles Ross, and James Grieve Apples, and Clapp's Favourite and Doyenné du Comice Pears; second Mr. H. Whiteley; third J. Short, Darlington.

In the Single Dishes class Mr. H. C. Wood, Walwick Grange, led for Ecklinville; Mr. S. Moor, for Warner's King; Sir F. Chance, for Lord Derby; Lady Rayleigh, for Bismarck; Lady Knott, for Lane's Prince Albert, Golden Spire, Charles Ross and Wealthy; Mr. S. Moor, for Bramley's Seedling; Mr. C. Wood, for Stirling Castle; Lady Rayley, for Mére de Ménage and also for Rival and Peasgood's Nonesuch; C. Atkinson, Esq., West House, was first for Rev. W. Wilks.

For two dishes of Plums, Lady Knott led, with Lady Rayleigh second, and the same exhibitors occupied similar positions for a single dish of Plums.

The Local Cottagers' Classes and the Bottled Fruit Classes were well filled, in fact the finest dish of Peasgood's Nonesuch in the show was exhibited by Mr. T. Fairbridge, Henley, Stocksfeld, to whom a special prize was awarded.

In the non-competitive section Messrs. W. Fell and Co., Hexham, were awarded a Gold Medal for a grand display of about sixty dishes of fruit in variety. A silver medal was awarded to Lady Knott for three dozen dishes of Pears. Messrs. Michie and Co., Alnwick, were also awarded a Silver Medal for a collection of hardy fruits. Messrs. Britton and Sons, Carlisle, and Messrs. Laxton Bros., Bedford, also showed collections of fruit.

Messrs. Kent and Brydon, Darlington, had a fine exhibit of Asters, Phloxes and other hardy flowers. The Armstrong College sent an instructive exhibit showing various diseases of plants. The Northumberland Education Committee sent a collection of hardy fruits, examples of stocks and methods of grafting, etc.

Lectures were delivered by Mr. Seabrook on "Fruit Packing and Marketing," and by Mr. Edward Bunyard, on "Some Recent Researches in Fruit Growing."

NATIONAL CHRYSANTHEMUM.

The Floral Committee of this Society met at the Royal Horticultural Hall during the afternoon of October 6th, when several interesting Chrysanthemum novelties were presented for consideration. The following awards were made:

First Class Certificates.

Reginald A. Roots.—A beautiful, decorative Japanese variety with ivory-white flowers of graceful form and good size. The florets are comparatively narrow and prettily twisted towards the tips. (See Fig. 95, p. 263). Shown by Mr. W. Roots, Cranford.

Primrose Poiteau.—This is a useful and sturdy sport from Blanche Poiteau. The florets are broad, slightly cupped at the tips and of a pleasing Primrose-yellow colour. Shown by Messrs. Lowe and Shawyer, Uxbridge.

J. Cotton.—A very handsome, decorative, Japanese variety of pleasing form. The colour is brilliant chestnut-red with old-gold reverse.

G. Carpenter.—A fair sized, decorative, Japanese variety with graceful flowers of light orange-yellow colour. This and the previous variety were shown by Mr. G. Carpenter, West Hall Gardens, Byfleet.

Sunbeam.—A light yellow Japanese variety with flowers of useful size for decorative purposes. Shown by Messrs. W. Wells and Co.

Obituary.

James Britten.—Our readers will learn with regret of the death of Mr. James Britten, which occurred suddenly on Wednesday, Oct. 8, in his 79th year. Born at Chelsea on May 3, 1846, he was educated privately and had ideas of studying medicine. However, he became attracted to the subject of botany and in 1869 entered Kew Herbarium as an assistant. Two years later he applied for a post in the Botanical Department of the British Museum, then still at Bloomsbury, and remained in the Department until he reached the retiring age in 1907. He continued to work fairly regularly in the Herbarium after his retirement, and indeed was there, apparently in his usual health, the day before his death. He will be remembered by botanists chiefly for his editorship of *The Journal of Botany*. He contributed a note to the first number of this publication in 1863 and to every succeeding number, becoming its editor in 1879 and continuing so to his death. He was an editor of the old school and was at times not sparing of his contributor's feelings, but few of them can have failed to have benefited from his tuition, for that is what it amounted to with younger men. He had a flair for editing; his first experience in that direction being with the *Quarterly Magazine* of the High Wycombe Natural History Society before he entered Kew. After monographing the Crassulaceæ for *The Flora of Tropical Africa* (1871), he published a number of semi-popular works, but soon became devoted to the historical side of botany. He edited Turner's *The Names of Herbes* (1881), and *The Illustrations of Australian Plants*, collected in 1770 during Captain Cook's voyages (1900 to 1905); with Robert Holland he compiled *The Dictionary of Plant Names* (1886), and with G. S. Boulgar, a biographical index of *British and Irish Botanists* (1893), to which were added three supplements and of which a second edition was ready for press. It is to be regretted that *The Catalogue of the Sloane Herbarium*, on which he spent much time, was not completed. He also published *Old County and Farming Words*, and an edition of Aubrey's *Remains of Gentilisme*. He edited *Nature Notes* for eight years. No account of his life could omit reference to his social and religious work. At the age of twenty-one he was received into the Roman Catholic Church. Among other services he rendered to the Church of his adoption was the restarting of the Catholic Truth Society in 1884, and of which he acted as Secretary until 1922. This office entailed a considerable amount of literary work, as did also the editorship of *Catholic Book Notes*. He was created Knight of St. Gregory in 1907, and Knight Commander *car placca* in 1917. Small in stature, he was amazingly quick-witted and had a vast store of amusing anecdotes, and an abundance of interests. He tried his friends sorely at times, as his was the temperament of a controversialist and an editor. In later years, at least, if the demands were no less incessant the amends were never lacking. *J. R.*

Dr. W. B. Hemsley.—The death at Broadstairs on October 7, in his eighty-first year, of Dr. W. B. Hemsley, removes one more link with the days when horticulture could still claim the services of men like Dr. Maxwell T. Masters, and descriptive botany possessed such votaries as Sir Joseph Hooker, Mr. G. Bentham, Professor D. Oliver, and Mr. J. G. Baker. Born at Eastoathley, in Sussex, William Botting Hemsley, member of a well-known family of gardeners, showed as a boy strong botanical tastes which led him, when his early practical training was over, to enter Kew as a young gardener, in his seventeenth year, in 1860. At Kew his remarkable botanical aptitude soon arrested attention and led to his transfer to the Herbarium. Here Hemsley's work attracted the notice of Mr. Bentham, then engaged in writing the *Flora Australiensis*, and in 1865, when a vacancy occurred in the post of Herbarium Clerk, Hemsley was selected to fill it. During the period of his temporary service in the Herbarium, Hemsley devoted his leisure to general botanical studies, and in 1863 he gained the first prize in botany, awarded by the Royal Society of Arts. His enthusiasm and assiduity proved, however, too great a strain on his physique, to the regret of his superiors he was compelled, in 1867, owing to a complete breakdown in health, to resign his Herbarium post and retire to Sussex. Notwithstanding his illness he was able to continue his botanical pursuits, the results of his studies being embodied in a *Handbook of Hardy Trees, Shrubs, and Herbaceous Plants*, intended primarily for the use of gardencraft, and in an *Outline of the Flora of Sussex*, for the benefit of local botanists. The quality of these works led to Hemsley's election in 1875 as an Associate of the Linnean Society. By 1874 his health had improved sufficiently to admit of his return to Kew to undertake, as an independent worker, the preparation of the botanical volumes of Salvin and Godman's *Biologia Centrali-Americana*, published during 1879-88 and of the Challenger volume on *Insular Floras*, published in 1885. The quality of these works was such that in 1883, his health having become completely restored, he was reappointed to the Kew staff as Assistant for India. In this capacity he prepared his invaluable *Index Florae Sinensis*, and collaborated with Dr. Aitchison in writing the *Botany of the Afghan Boundary Commission* and with Sir Henry Collett in an account of the vegetation of the Shan States. The excellence of Hemsley's work since 1874 was recognised, on the completion of the botanical portion of the *Biologia Centrali-Americana*, by his election in 1889 as a Fellow of the Royal Society, and as an honorary member of the Mexican Natural History Society. In 1890 Hemsley was promoted to the post of Principal Assistant in the Herbarium at Kew in succession to Mr. J. G. Baker, whom he succeeded again in 1899 as Keeper of the Herbarium and Library. This latter position Hemsley filled until his retirement from the service on attaining the age of sixty-five, on December 28, 1908. The Ministry (then the Board) of Agriculture placed on record their appreciation of the value of his public services, stating in their minute that "the Board greatly regret that Mr. Hemsley's retirement has become necessary, but they trust that he will be spared for many years to come to continue his labours on behalf of that science with which his name is so honourably associated, and towards the prosecution of which he has done so much." But he had already earned distinction in many quarters. His services to horticulture had brought him honorary membership of the Royal Horticultural Society and the award of their Victoria Medal of Honour, while his position as an authority on insular floras had led to honorary membership of the Royal Society of New South Wales, and corresponding membership of the German Botanical Society. Taking up his residence at Strawberry Hill, Hemsley for the next eight years continued at Kew his labours on behalf of gardening and of botany, and the value of his work was recognised by honorary membership of the New Zealand Institute, and by the conferment by the University of Aberdeen, in 1918, of the degree of LL.D. By this time, however, failing physical strength had led him to relinquish active botanical work and to seek a new home, in which to spend the evening of his days, in a climate less relaxing than that of the Thames Valley. Perhaps those who will feel most the loss of a friend are those who still survive of the Indian botanists to whom, when Assistant for India at Kew, Hemsley lent such effective and ungrudging aid. But all who ever came in contact with him will treasure the memory of his constant courtesy and kindness, his wide knowledge and his unaffected modesty and simplicity.

ANSWERS TO CORRESPONDENTS.

Amaryllis × Clivia: *F.D.* The hybrid sent for inspection proved interesting, and if more colour could be obtained in the flowers the plant should be very valuable.

Fruit Trees Failing to Crop: *J. R. C.* The failure is probably due to excessive growth, and in the case of the Plum and the Damson may also be due to a lack of lime in the soil. As the trees are still young it would be a good plan to lift and replant them on the same site so soon as the leaves turn yellow and begin to fall. During the process remove any gross growing roots that may be found and particularly those which have a downward tendency. When replanting add some old mortar rubble to the soil.

Insect on Privet: *D.L.* The insect attack- the Privet is the caterpillar of a moth. It may be controlled by spraying the hedge with lead arsenate at the rate of six pounds of arsenate to one hundred gallons of water, or at the rate of 1 oz. to the gallon of water.

Managers' Notice to Leave: *E. S.* In the absence of any express agreement the length of notice required to terminate the engagement as Manager of a Nursery and Retail Florist and Fruiterers' shop must be reasonable and depends on the custom of the trade in the particular locality. It is not stated whether the salary is paid weekly, monthly or quarterly. The method of payment, though not conclusive, is helpful in determining the question, but enquiries should be made locally as to the custom prevailing in the neighbourhood.

Names of Plants: *G. P.* 1, missing; 2, Cupressus pisifera var. plumosa; 3, Nepeta Mussinii; 4, Helxine Soleirolii; 5, Selaginella kraussiana. *G. J. W.* The green-leaved Vine is a form of Vitis vinifera; the purple-leaved one, Vitis vinifera var. purpurea. *P. B. W.* 1, Polygonum compactum; 2, Veronica Traversii; 3, Spiraea japonica; 4, Cotoneaster Simonsii; 5, Artemisia lactiflora; 6, Lythrum Salicaria rosea; 7, Solidago puberula; 8, Lysimachia barystachys; 9, Thymus Serphyllum lanuginosus; 10, Acaena inermis. *T. J. K.* 1, Spiraea Douglasii; 2, Myrtus communis; 3, Inula montana; 4, Ruta graveolens; 5, Lonicera Halliana; 6, Cornus floridus; 7, Cercis Siliquastrum; 8, Hippophae rhamnoides; 9, Impatiens Roylei; 10, Potentilla Vilmorinii; 11, Sedum Aizoon; 12, Tunica Saxifraga; 13, Alyssum argenteum; 14, Betonica grandiflora; 15, Linaria Cymbalaria. *W. G.* 1, Picea omorica; 2, Pseudotsuga Douglasii (Douglas Fir); 3, Cedrus Deodara; 4, Abies Lowiana; 5, Populus balsamifera (Balsam Poplar); 6, Cupressus Lawsoniana (Lawson Cypress). *G. E. M.* All hybrids of Veronica longifolia. *S. F. A. W.* and *Old Subscriber.* Too shrivelled for identification. *Scotie.* 1, Mesembryanthemum edule; 2, Veronica longifolia; 3, Tradescantia virginiana; 4, Geum rivale variety; 5, Malcolmia maritima; 6, probably Primula malacoides; 7, Nepeta Mussinii. *A. B. H.* (large) Artemisia gnaphalodes; (small) Artemisia frigida. *J. C.* Phytolacca decandra. *W. T. S.* Gazania splendens. *Essex,* 1, Artemisia lactiflora; 2, Helenium autumnale; 3, Rudbeckia speciosa; 4, Achillia eupatorium; 5, form of Rudbeckia laciniata. *W. H. S.* Tecoma radicans.

Orchid Blooms Differently Coloured: *G. A.* Such cases of dissimilarity in colour of the flowers of the same plant as shown in the blooms of Laelio-Cattleya sent are not common, but we have seen instances of it before both on flowers on the same spike and those produced independently. It is probable that the batch of seedlings which produced your plant had specimens with yellow petals and others with whitish segments, as shown in your flowers on the same plant. Your blooms show the same form and purple colour on the front of the lip, and the whitish ground colour of both is the same, but in the two-flowered, and more vigorous specimen, the yellow tint, inherited from one of the parents, is developed, and in the other suppressed, probably by arrested nourishment, for the column of the whitish form seems to be imperfectly developed and the pollen masses not produced.

Unhealthy Vines: *S. H.* Your young Vines have been over-dosed with nitrogenous matter. A soil, such as you are so fortunate to have, containing a considerable amount of decaying fibre, and in a suitable physical condition, needs no compounded artificial manure for a year or two after planting. It is always safe to add bone flour, potash, and lime rubble, which are comparatively harmless, even when in excess of requirements, but one needs to be very careful about applying nitrogenous food to young fruit-bearing plants in a soil which is already sufficiently rich in that element. The Vines will probably improve another season if you do not give any stimulating nitrogen. Endeavour to get air into the border to sweeten it, by exposing portions where there are few or no roots and a slight dressing of fresh slaked lime will also help in this direction. The roots, unless the soil has been dressed with manure to such an extent that they will not enter it, will be found to be rather gross with but few fibrils. Such roots will not ripen and will die back in winter to a great extent, which may be a fortunate check to over-robustness. Take care of every leaf this season so long as it has a particle of green colour in it. With young Vines in the condition of yours, there is always a difficulty in knowing what to do with them the second season. If they are cut down they will make still grosser growth, composed of large cells and when some of the water is withdrawn they will partly collapse. The stems will do the same and become flattened instead of cylindrical. On the other hand if you leave them several feet in length they will produce growths of very irregular sizes, and there will be no foundation for a well balanced Vine. In such cases we have left the canes five or six feet in length, when they would form some watery, vigorous growths at the tops. When these growths became six inches or eight inches in length they were removed, and medium or even weakly growths selected for leaders from the lower parts of the canes. By this time some of the watery energy will have disappeared and the roots will be in a condition to send up something besides water, which was not the case when the growths first started. The superfluous shoots should not all be removed at the same time

Communications Received.—J. Mc'D.—R. H.—W. G. G.—W. H. G.—G. L.—E. D.—Ride.—G. K. P.—A. H.—R. H. L.—W. C. D.—W. and T.

TRADE NOTE.

Messrs. Hewitt, Ltd., Solihull, were awarded a silver-gilt medal at the Royal Caledonian Horticultural Society's Show (see p. 136) for their group of Gladioli and Delphiniums.

THE
Gardeners' Chronicle

No. 1974—SATURDAY, OCTOBER 25, 1924.

CONTENTS.

Agricultural scholarships 277
Aldenham, flower gardening at 282
Alpine Garden—
  Erigeron mucronatus 279
  Verbena venosa ... 279
Apples, a discussion on 288
Books, notices of—
  Flowering Plants of South Africa ... 278
Bulb Garden—
  Iris unguicularis ... 281
Bulbs, importation of, into the Isles of Scilly 277
Fruit crops, remarks on the condition of the 287
"Gardeners' Chronicle" seventy-five years ago 279
Garden notes from south-west Scotland 283
Hardy flower border—
  Aster hybridus luteus 282
  Lathyrus Sibthorpii... 282
  Mimulus bartoniana 282
Horticulture at the British Empire Exhibition 286
Nursery Notes—
  Mr. R. C. Notcutt Woodbridge ... 287
Obituary—
  Blaxill, W. C. ... 292
  Bodger, John ... 292
Orchid notes and gleanings 283
Parks and gardens, public 282
Potash, Alsatian ... 277
Potato crop, the Scotch 278
Rhododendrons... ... 286
Rose garden, the—
  Rose Phyllis Bide ... 281
Smith, Mr. J. T., ... 278
Societies—
  Royal Horticultural 280
Strawberries, the cultivation of 277
Trees and Shrubs—
  Crataegus tanacetifolia 285
Violas or tufted Pansies, the origin of 284
Week's Work, the ... 280
Wisley, notes from ... 283

ILLUSTRATIONS.

Apple, Herring's Seedling 289
Crataegus tanacetifolia, fruiting branchlet of, 284: specimen tree in the Cambridge Botanic Garden 285
Rose Phyllis Bide 281
Smith, Mr. J. T., portrait of ... 278
Verbena venosa 279

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 46·9.

Actual Temperature:—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 22, 10 a.m.: Bar. 30·2: temp. 48°. Weather, fine.

The Cultivation of Strawberries.

The leaflet recently issued by the Ministry of Agriculture on the cultivation of Strawberries, although addressed primarily to the small-holder and professional grower, contains much information of value to the gardener. It is true that the varieties recommended do not include some which should find a place in every private garden—at all events where flavour is ranked above yield—nor is mention made of the perpetual-bearing sorts. Nevertheless, the advice which is given in the leaflet, particularly on preparation of ground and manuring, should be considered by everyone who finds trouble in growing Strawberries well. The very fact that the Strawberry is such an accommodating plant leads people to rest content with much smaller yields than they might obtain if more trouble were taken in choice of varieties suitable for particular kinds of soil and as to manures which should be applied to the crop. Information, except of a general sort, can only be obtained by trial, and rows of varieties known to produce good crops of well-flavoured Strawberries should be planted until the gardener has satisfied himself which kinds are best adapted to the soil he cultivates. If the plantation be made in good garden soil there is but little need for special preparation of the ground; but if it is to be made in ground recently brought into cultivation, the preparation should consist in providing a good root run, plenty of nourishment and clean ground—as for example, that from which a Potato crop has been taken. If a good start be made the problem of manuring is a fairly simple one. The bed, it is be presumed, is not to last more than three or four years, and during that time with land previously well manured—at the rate of twenty tons to the acre—there will be no need to apply further dressings of stable manure. But the Strawberry is a greedy plant and requires a liberal supply of nitrogen and phosphates. These may be given in the form of wool waste supplemented by an annual dressing of mixed bone and meat meal. The wool waste or shoddy or similar nitrogen-containing manure is to be applied liberally, say at the rate of twenty tons to the acre; the bone and meat meal should take the form of an annual dressing of about four cwts. to the acre. The pamphlet does not appear to refer to liming, but the gardener who works either light or heavy land will do well to see that it is not deficient in lime, and if lime proves to be lacking to give a good dressing before the land is planted—chalk, if the land be light, and slaked lime if it be heavy. Guanos rich in phosphates are also to be recommended for use annually, and sparingly. Careful attention during the summer, after planting, should serve to establish the plants, and the attention which is most profitable, beside the removal of runners, is frequent hoeing. If this has been done thoroughly the ground should be clean and will require only a repetition of the hoeing before the litter is put in place. As litter, short Barley-straw is recommended. It should be put in position whilst the berries are quite small and the first trusses upstanding. Later, when they bend beneath the swelling fruit it is more difficult to work the litter closely round the plant. Something less than a ton of straw will suffice for bedding down an acre of Strawberries. When the crop has been gathered the straw may be raked up, and stacked for use again in the following year. The wastage which it will have undergone will entail the addition of an amount equal to what is left of last year's straw. After raking the straw and hoeing the ground it is good practice, at all events on land which tends to be heavy, to run a plough between the rows, so as to earth up the plants and facilitate drainage. Three years is generally long enough for a plantation, and if care is taken to keep up a succession of plants from well rooted runners—rooted for prefence in a sand medium—there is more advantage than disadvantage in limiting the life of the bed to that number of years; for the first crop, though light, is the best so far as flavour is concerned; the second, though heavier, is inferior in flavour; and the third is both light and, in comparison with the first, deficient in flavour. In certain cases it is true the plants crop well even in their fourth year, and so the grower must be guided by his own experience. A good crop from second year plants should amount to about two tons to the acre; a first crop to about one-and-a-half ton. Where the ground is in good condition, well prepared and well cultivated, the risk of damage from pests is not great; but nevertheless the Strawberry is no exception to the rule that every plant when not in perfect health, and sometimes even when it is, is liable to attack by insect or fungous pests. Chief among them is eelworm, which is said to give rise to the disease known as Red Plant. On land recently brought under cultivation, wire worms may give trouble, and slugs of course are always to be reckoned with. Mildew is sometimes a source of serious loss, and attacked plants must be treated with flowers of sulphur or a sulphur preparation.

Agricultural Scholarships.—The Ministry of Agriculture and Fisheries and the Board of Agriculture for Scotland invite applications for a limited number of agricultural scholarships, which are open to students who propose to take up posts as agricultural organisers, teachers or lecturers in agriculture, etc. Candidates should be graduates of a University, but exceptional candidates otherwise qualified, who have not had an opportunity of graduating, will be regarded as eligible. Scholarships are tenable for a period of two years, and are intended to give students an opportunity of broadening their knowledge of agriculture both at home and abroad. The value of the scholarships will vary according to the scholars' means and to the cost of living prevailing in the country visited, but in no case will the value of a scholarship exceed £200 per annum. In addition, laboratory fees and travelling expenses incurred for the purposes of the scholarship will be defrayed. Forms of application and all other particulars may be obtained from the Secretary, Ministry of Agriculture and Fisheries, 10, Whitehall Place, London, S.W. 1, in the case of English and Welsh students, and from the Secretary, Board of Agriculture for Scotland, York Buildings, Queen Street, Edinburgh, in the case of Scottish students. The latest date for receiving applications is 31st October, 1924.

Importation of Bulbs into the Isles of Scilly.—We are informed by the Ministry of Agriculture and Fisheries that the importation of bulbs into the Isles of Scilly has been restricted since January 1 last by the Bulb Diseases (Isles of Scilly) Order of 1923 which requires every consignment of Daffodil or Narcissus bulbs landed in the Isles to be accompanied by a certificate that they have been examined and found free from disease, or a declaration that they have been submitted to the hot-water treatment. At the request of the growers in the Islands the Ministry has issued an amending Order—the Bulb Diseases (Isles of Scilly) Order of 1924—which came into operation on October 1. Under this Order, the landing of Daffodil and Narcissus bulbs in the Scilly Isles may be licensed by an Inspector of the Ministry, on condition that the bulbs are sent direct to the Bulb-Treating Station which has been established at St. Mary's by the Agricultural Committee of the Isles of Scilly, and there submitted to the hot-water treatment before being handed over to the actual consignee.

Import of French Cider Apples.—The cider manufacturers in the west are importing large quantities of cider Apples from France, the Devonshire farmers having refused to sell their cider Apples for £4 10s. per ton, which is offered by the cider makers, the farmers demanding £6 a ton.

Alsatian Potash.—The total content of two beds of potash minerals in the south of the province of Alsace has been estimated at 2,000,000,000 tons of potash salts, with an average content of about twenty-two per cent. of pure potash. The cubic content is equal to 300,000,000 tons of actual potash, sufficient to supply the world, at the present rate of consumption, for over two hundred years.

Michaelmas Daisy Trials at Wisley.—The Royal Horticultural Society will carry out a trial of perennial Asters in their gardens at Wisley during the coming year. Raisers are invited to send three plants of each new variety introduced since the last trial in 1919-20, to reach the Director, R.H.S. Gardens Wisley, Ripley, Surrey, on or before November 30, 1924.

Fédération Horticole Professionnelle Internationale.—The Committee responsible for the arrangements in connection with the entertainment of foreign delegates to the International Horticultural Conference, May, 1924, met recently for the purpose of receiving the Secretary's report and statement of income and expenditure. In adopting the same the committee viewed with much satisfaction the splendid response to the appeal for funds from traders, societies and the trade press, resulting in a cash surplus of £38. After discussion it was unanimously agreed to reimburse the East Malling Research Station with the cost (approximately £10) of the lunch given to delegates on May 30, and that a presentation be made to Mr. G. Arluison, International Secretary since 1920, as a token of regard for his splendid work in the interests of the Fédération. These two items of expenditure reduced the surplus on the Fund to approximately £23, which the Committee agreed to leave with the Chamber of Horticulture as a nucleus for a similar future event. The committee consisted of representatives of the Horticultural Trades' Association, British Florists' Federation, Horticultural Club, Worshipful Company of Fruiterers, Worshipful Company of Gardeners, and the Chamber of Horticulture.

Flowering Plants of South Africa.—The fifteenth number of Vol. V. of the *Flowering Plants of South Africa* contains illustrations and descriptions of ten plants. This publication is very similar in appearance to the *Botanical Magazine*, but the size of the plates are a little larger, being ten inches deep and seven-and-a-half inches wide, compared with nine-and-a-half inches deep and six inches wide in the *Bot. Mag.*, except when the latter are folded. Richardia melanoleuca, tab. 141, has a yellowish spathe blotched at the base, and foliage with translucent spots. It was introduced into this country in 1868. Urginea macrocentra, tab. 142, was described by the late Mr. J. G. Baker in *Gard. Chron.*, 1887, Vol. I (3rd series), p. 702. The inflorescence is a dense, cylindric raceme with small flowers like those of an Allium, with a lilac suffusion, subtended by bracts with long, reflexed spurs. Ceropegia Sandersoni, tab. 143, is one of a group of four species in which the corolla lobes are united into an umbrella-like canopy supported by five short stalks. It was described in *Bot. Mag.* so long ago as 1869; the flowers are greenish-yellow. Anoiganthus breviflorus, tab. 144, is a bulbous species described by Mr. Baker in the *Journal of Botany*, 1878. The flowers are yellow, developed in an umbel of from two to ten. Burchellia bubalina, tab. 145, is an old plant in this country, and under the name Lonicera bubalina was described by Linnaeus in 1781; it is stated that no fewer than six different names have been applied to this species. Pelargonium pulverulentum, tab. 146, has a short, thick woody stem, broad, cordate, somewhat lobed leaves and an inflorescence of six to twelve flowers, forming an umbel on a peduncle up to twenty c.m. long. The flowers are yellowish-white with a purplish blotch. Thunbergia natalensis, tab. 147, is a showy species of Acanthaceae with large, blue flowers that have a bright yellow throat. This plant shows very great promise as a subject for indoor cultivation in this country. Thunbergia alata, tab. 148, is a well-known garden plant with striking flowers of a bright orange colour with dark maroon throat. It makes a fine indoor trailer or creeper and is easily raised from seeds. Aloe Peglerae, tab. 149, is practically stemless with a dense rosette of leaves that curve upwards. The peculiar lax arrangement of the leaves is very characteristic and the plant has been compared to a loose Cabbage. The flower spike, some eighteen c.m. long, bears reddish flowers which become greenish-white at maturity. Pseudobaeckea virgata, tab. 150, is interesting botanically more than horticulturally; it has very slender, Heath-like growth; the flowers are inconspicuous.

Mr. J. T. Smith.—In the little blanket town of Witney, Oxfordshire, in the gardens attached to Rosedene, Mr. J. T. Smith commenced his gardening career under the late Mr. William Morris, who had at one time been propagator at Hampton Court Gardens and was a clever plantsman of the old school. While at Rosedene, Mr. Smith attended most of the lectures and demonstrations given by the County Council instructors, thus taking full advantage of the opportunities that existed for extending his education. After four years at Rosedene he moved to the gardens at Dytchley Park, Enstone, Oxfordshire, the seat of Viscount and Viscountess Dillon. Fruits under glass and specimen hard-wooded plants were grown extensively and well at Dytchley at this period; the place contained a good collection of trees and shrubs, many of them large specimens, and summer bedding was carried out extensively. Viscount Dillon took a personal interest in young Smith and gave him numerous gardening books and urged him to apply for admission to Kew. His first application was without success, as there were no vacancies, and it was not until April, 1907, that he entered Kew, where he served in various departments and subsequently became sub-foreman of the Temperate House Propagating Department. While at Kew he interested himself especially in Australian and New Zealand plants and took an active part in the Kew Mutual Improvement Society, of which he became chairman. Mr. Smith left Kew to take charge, under Messrs. Wallace and Co., of Colchester, of the new alpine and bog gardens then being made at Buckland House, Berkshire, for Sir Maurice and Lady Fitzgerald. From Buckland House he moved to Nymans, Sussex, where he became tree and shrub foreman and had charge of the choice collections of shrubs, alpines and Heaths for which the place is noted. His next appointment was that of gardener to Major Dodgson, D.S.O., Handborough, Oxfordshire, and while he was there war broke out. He volunteered for active service, but was rejected, and a few months later he left Oxfordshire to assist Mr. F. Streeter at Caldecote Towers, who was then successfully cultivating and exhibiting plants, fruits and vegetables. Subsequently Mr. Smith joined up under the Derby scheme and was at first attached to the 3rd Bedfordshire Regiment at Felixstowe, but later to the Suffolk Regiment, with which he served for some time in Belgium. Shortly afterwards he was transferred to the Royal Engineers and served with them as a N.C.O. both in Belgium and in France. He was demobilised from Vimy Ridge in September, 1919, and in November of that year was appointed to his present charge of the beautiful and interesting gardens belonging to Reginald Cory, Esq., at Duffryn, Cardiff. Since his appointment numerous high awards have been made to exhibits from Duffryn, including the Cain Cup for the best exhibit from an amateur at the Royal Horticultural Society's summer show of 1920—Cacti and other succulent plants; the Gold Medal of the Cardiff and County Horticultural Society in 1921 for Japanese and pigmy trees; a similar award in 1922 for a large group of Dahlias in pots, and another Gold Medal at Cardiff during the present year, for Dahlias and Cotyledons.

MR. J. T. SMITH.

Brown Rot of Apples.—Conditions this year have been very favourable to the spread of Brown Rot on Apples. The rot causes the dying-back of shoots, and in the spring the withering of blossoms. It is often put down to damage by frost, but this is not the cause. The main source of infection of this disease is from the mummified fruits which are allowed to remain on the trees all the winter. In the spring these become centres of disease from which spores of the fungus are blown on to shoots and blossoms and give rise to fresh centres of infection. The most effective preventive measure is the removal and destruction of all mummified fruits; these should be collected and either burned or buried deeply. In gardens and small orchards it is possible to examine the trees at intervals during the season and remove all fruit showing the slightest signs of Brown Rot. In large orchards such a course is not always practicable, but every effort should be made to remove diseased fruits as early as possible. In addition, any infected spurs, together with cankerous growths on the stem, should be cut out. This operation is best performed in summer when the dead or dying spurs are conspicuous, but it may be carried out later provided it is completed before the fungus resumes its growth in spring. When fruit is to be stored, great care should be exercised in discarding all specimens showing signs of Brown Rot, for the disease will not only continue to develop in the affected Apples, but will spread to others.

Scotch Potato Crop.—The Board of Agriculture for Scotland has issued its annual return showing the acreage under the different varieties of Potatos on the farmlands north of the border. As regards first earlies the area of 15,739 acres is 1,572 acres less than it was in 1923, and of that total Epicure accounts for 8,000 acres, which practically represents the area cultivated in South Ayrshire and Wigtownshire, where that variety is most productive. Sharpe's Express, Eclipse, and Duke of York with four figures, follow in the order given. In the group of second earlies, Great Scot with 9,128 acres is the most popular, and British Queen comes next with 5,568 acres, out of an approximate total of 35,240 acres. The area planted with main crop sorts was 86,821 acres, which compares with 82,725 acres last year. Arran Chief still occupies first place with 18,908 acres, but these figures record a rapid decline in recent years owing to its susceptabiliy to Wart Disease. King Edward comes next and Kerr's Pink third, while Golden Wonder, Majestic, Field Marshal, Arran Victory, Langworthy, and Tinwald Perfection occupy positions lower down in the list. The total acreage is estimated at 137,800 acres, an increase of 800 acres. Unlike the English report, the condition of the crops is rather unfavourable. As the result of the abnormally wet season, disease is present to a considerable extent in the counties of Kincardine, Forfar, Perth, Fife, and Berwick.

and some parts of Aberdeen, and it is feared that the quality and the yield will be affected to a greater or less extent. The most satisfactory reports are those from the western and south-western districts, where the crops are stated to be healthy and vigorous. Yields varying from five to ten per cent. above the average are expected in seven districts, while in a number of other areas the estimated yield is five per cent. below normal, and in south-east and central Perthshire the deficiency is put as high as twenty and thirty per cent. respectively. Only in south-east Lanark and Dumfries-shire has the system of spraying the crops been adopted, but only to the extent of twenty-five per cent. Market prices continue to advance, and as a result of the strong demand at recent auction sales so high as £57 10s. per acre was paid for popular maincrop varieties.

Appointments for the Ensuing Week.—Tuesday, October 28.—Bournemouth Horticultural Society's show (two days); Weymouth and District Chrysanthemum Society's show (two days); Newcastle and District Horticultural Society's annual meeting. Wednesday, October 29.—Morley and District Paxton Society's meeting; Glasgow and West of Scotland Horticultural Society's meeting. Friday, October 31.—Netherlands Chrysanthemum Club's show (10 days). Saturday, November, 1. — Blackburn and District Horticultural Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Potatos in New Zealand.*—I am glad to see that New Zealand Potato seeds have been successfully reared in this country, and I hope that a race of Potatos more impervious to disease than any hitherto in cultivation will be obtained from among them. Mr. Cox speaks of his Potatos being very shallow-eyed, and, to the best of my recollection, all the Potatos which I saw in New Zealand had the same characteristic; but I am sorry to say that I did not taste a really good Potato while I was in the colony; they had all a waxy appearance when cooked, but probably this might be owing to the mode of cultivation (climate ?). The best Potatos I ever tasted in any country were grown in Van Diemen's Land, from which island the Sydney market is copiously supplied; I attempted to bring a sample of them home, but during a long and tempestuous voyage they all perished, with the exception of two or three, and those I only saved by introducing them into a plant case, but I am not aware whether the London nurseryman with whom I left them succeeded in propagating them or not. The New Zealander's system of Potato cultivation simply consists in selecting his ground, and, during the dry season, cutting down and burning the underwood, the flames from which so scorch the trunks of the large timber that death is sure to follow, and they stand in that condition for many years to come. The fuel exhausted, and the ashes spread, the ground is ready for the sets, which are merely introduced below the surface by a long-handled piece of wood, the only spade the "Maori" possessed previous to the introduction of European implements. In harvesting the crop, the largest tubers only are gathered, the others are left to produce another crop, and after that a fresh piece of ground is selected. The leafless giants of the forest, with beautiful green Grass growing below them, have, to a stranger, a singular appearance as he approaches the shore, and views those "old Potato grounds." The New Zealander displays much patience when disposing of his produce among Europeans; not unfrequently will those athletic savages retrace their way to their "pah," with a heavy burden upon their backs, rather than come down a halfpenny in the price they first ask. *A. Burnett, Gardener, Roby Hall, Gard. Chron., October* 27, 1849.

ALPINE GARDEN.

VERBENA VENOSA.

The accompanying illustration (Fig. 99) will serve to remind many readers of the extensive use formerly made of Verbena venosa when summer bedding was in greater vogue than now. Nicholson, in his *Dictionary on Gardening*, observes that it is "a beautiful and well-known half-hardy plant, very useful for bedding, particularly if mixed with a silver-leaved Pelargonium." Curiously enough although formerly popular in gardens, the plant is now unknown to many gardeners of the younger generation, to whom the notes on pp. 245 and 267 have doubtless proved very interesting. Although half-hardy, there are those, myself included, who, while living in the south of England a quarter of a century or more ago, regarded it as hardy, simply because there was no reason to lift and protect it during winter—this was on fairly light land overlying gravel. The evidence shown in the notes cited are, however, ample proof that some plants of V. venosa should be lifted and placed in frames at the end of each autumn, otherwise the grower may lose the whole stock if the winter is severe or very wet.

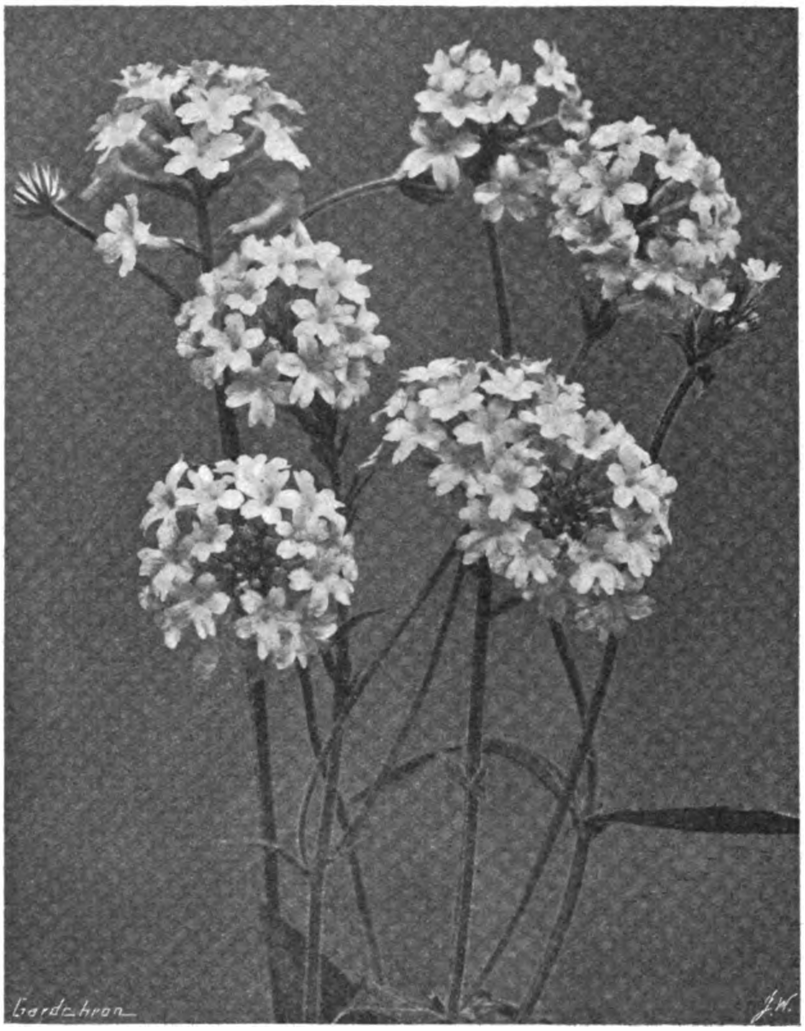


FIG. 99.—VERBENA VENOSA.

Verbena venosa is a native of Brazil and Argentina and was introduced to this country in 1835. Apparently it is the only species with tuberous roots. Propagation may be affected by cuttings or division, or by seeds sown under glass early in the year. For beds, for edging large beds and borders, or for providing a patch of colour in a border or large rock garden, V. venosa is a desirable subject. The flowers are usually of a bluish-purple colour, but there are forms in which the colour is either deep lilac or bright blue. Mr. Weather points out in his *Practical Guide to Garden Plants* that the seeds of V. venosa are rather slow to germinate and that "if the seeds are steeped in water for a few hours they will probably germinate more freely." This may be so, but I do not remember experiencing any difficulty in regard to germination. *C.*

ERIGERON MUCRONATUS.

One frequently comes across this Fleabane under the name of Vittadinia triloba, a title which belongs to a quite different plant. It has a habit in some gardens of being short-lived, while in others it not only proves a really hardy perennial, but sows itself so plentifully that it occasionally becomes too troublesome if left alone. This free-seeding habit appears most pronounced on a wall or steep rock garden, and when this is the case, the seedlings give some trouble by coming up among choice plants where their presence is not desired. It is not a little plant to be despised, however, as it has not only a good, rather trailing habit, but has pretty foliage and a wealth of its attractive little Daisy-like flowers of white and pale pink or purple. It evidently loves a dry situation, and is less likely to be lost there. While I prefer planting it in a place where it does not receive the morning sun, this precaution is not at all necessary where it becomes established and withstands the winter well. I have in my mind's eye a lovely wall garden, where E. mucronatus not only abounds, but threatens to take absolute possession, which it would do if it were not kept severely within bounds. *S. Arnott.*

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Oncidium.—The Brazilian Oncidiums, including O. Forbesii, O. curtum and O. varicosum, growing in the cool house, are rooting freely and sending up their flower spikes; they should be supplied plentifully with water at the roots. The plants produce strong, branching inflorescences which exhaust their energies, therefore only robust, well-rooted specimens should be allowed to flower. Weakly plants should have their flower spikes removed so soon as they appear, and be given every encouragement to make strong growth. In no case should the spikes be allowed to remain on the plants when the pseudo-bulbs show signs of shrivelling. After the flowering period is over the plants will require but little water, for if an excess of moisture is afforded, the roots will decay, but they must not be kept so dry as to cause the pseudo-bulbs to shrivel. Oncidium Kramerianum and O. Papilio, known as the Butterfly Orchids, are natives of a warmer climate than the species previously mentioned and should be grown in a light position in the Cattleya house. The plants will thrive either in pots or pans and should be provided with only a shallow compost of Osmunda-fibre. In the growing season these plants require a liberal supply of water at the roots, and they should not be kept excessively dry during their resting period. Many of these plants will now be producing a succession of flowers from their slender stems; to retain these plants in good health it is necessary to remove the stems after they have developed three or four flowers. The best time for repotting is a few weeks after growth commences.

Disa.—Towards the end of the present month is the most suitable time for repotting Disa grandiflora, D. Veitchii, D. langleyensis, and others. The plants are now developing shoots from the bases of the previous year's growth. Turn the plants out of their pots; shake all the old compost from the roots, and divide any that have become crowded masses, making the portions up again into specimens. The pots or pans should be well drained. Use compost of an open texture, consisting of equal parts of fibrous peat or Osmunda-fibre and Sphagnum Moss, with a sprinkling of half-decayed Oak leaves, silver sand and crushed bricks. After repotting, one watering may be given to settle the soil; afterwards, sprinkling the surface of the soil once or twice each day will suffice to keep the plants moist. The house in which they are grown should be freely ventilated, as Disas require a cool, moist, airy position at all times.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Spring Bedding.—So soon as the beds have been cleared of their summer occupants the ground should be thoroughly prepared for the spring flowering subjects. These should be lifted with good balls of roots and planted as early as possible while there is still some warmth in the soil. Plant, if possible, when the soil is in a friable condition, as it is then much easier to make the plants uniformly firm at the roots and leave the surface loose. Bulbs that are used in conjunction with such plants as Arabis, Aubrietias, Myosotis, Pansies and Violas, may be planted with a dibber, covering them to a depth of at least six inches on light soils or a little less on heavy soils.

Michaelmas Daisies.—Few hardy herbaceous plants are more valuable for garden decoration during the autumn months than Michaelmas Daisies, and the beauty of form and wide range of colour of the flower make them serviceable for many purposes. Grouped in the mixed-border they form its chief feature at the present time, and planted in broad masses on the outskirts of shrubberies they produce wonderful effects. Although planting may be done any time from now onwards, replanting is not practicable until early spring with many of the late-flowering varieties, as even when flowering has finished, the tinted foliage of some of them is decidedly decorative for a time and worth retaining for that reason.

Propagation.—Those who are desirous of increasing their stocks of shrubs may now insert cuttings of various subjects. Choose well-ripened, clean wood, and make the cuttings about a foot long. These should be inserted to about two-thirds of their length. The opening of a trench, placing the cuttings on a firm bottom and completing the work by making the whole quite firm, is preferable to planting with the dibber. Deutzia, Escallonia, Forsythia, Kerria, Philadelphus, Ribes, Spiraea, Viburnum, Weigela, and many others may be readily propagated in this way.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Lily-of-the-Valley.—In establishments where there will be a demand for these flowers during the next few months, the use of retarded crowns may be relied upon to keep up the supply. It is well to place the orders for the crowns early, calculating the approximate number that will be needed to cover a given period. If the supply has to be constant, it will be wise to arrange with the nurseryman for a fortnightly dispatch from the cold storage of consignments in sufficient quantities to meet the immediate demand. Retarded crowns may be brought into flower within four weeks from the time of taking them from cold storage. They should be unpacked immediately on arrival, and potted or boxed without delay. Ten or twelve crowns may be placed in a six-inch pot, using any light sandy soil for the purpose, which should be pressed firmly about the roots. The crowns should protrude some three-quarters of an inch above the surface soil. Thoroughly water the crowns and place the pots in a darkened, moist situation in a temperature of about 55°. Cover the pots with a deep layer of light fresh Moss and leave them in the dark until three or four inches of growth has been made, when they may be gradually brought into the full light of the house, shading the flowers always from bright sunshine. After the first week or ten days the temperature may be raised some five or ten degrees, should it be deemed necessary to hasten growth.

Liliums.—Liliums of the longiflorum and speciosum types, which have flowered during the past summer and have fully ripened their top growth should now be turned out of their pots before new roots are made. All the plump and flowering-sized bulbs should be re-potted forthwith in fresh soil and pots. A single bulb in a rather small-sized pot is the best method, placing the bulb low down in the pots, and allowing plenty of space for later top-dressings. The newly potted bulbs should be placed in a cold frame and covered with a few inches of fibre or peat Moss.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Walnuts.—These nuts should now be ready for gathering. If they do not part from the outer shell readily, lay them out thinly in an open shed for a time, when the husks will drop away from the nuts. The latter may then be washed if necessary, but they should be dried before being stored. They will keep well and plump if placed in stone jars or large pots with lids, and buried in the earth until wanted for use.

Planting Fruit Trees.—In planting fruit trees of all kinds, care should be taken to have the holes large enough to contain the roots when spread out. Nothing is more detrimental to their well-being than having the roots crammed in too small a space. The sub-soil should be well broken up to provide efficient drainage, and if the sub-soil is of a clayey or sticky nature, some coarse mortar rubble or broken bricks should be mixed with it to render it more porous. Slaked lime and wood ash will also tend to render the sub-soil sweeter. Never plant trees unless the ground works well and is not pasty when trodden or rammed. The roots should be trimmed where they are broken and spread out evenly as the work of planting is proceeded with. It is a good plan to work a little of the finer soil between them, such as old compost from the potting shed. Good quality bone meal is a great help to nearly all fruit trees, as it is very lasting. The finer roots should be laid out inclining somewhat towards the surface, as this will tend to keep them where they can eventually be fed, if necessary. It is wise to take out the holes for the trees some time before they are ready to plant, as the weather will sweeten the soil in the bottom, and render it more amenable for the roots to grow in. Standard and half-standard trees should be staked at once; in fact it is best to drive the stake in first and then plant the tree close to it, to obviate damaging the large roots close to the stem. Pruning may be deferred for a week or so to allow the trees and soil to settle. A light mulch of half-decayed manure will greatly benefit newly planted trees.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Muscat Grapes.—Now that the Muscat Grapes are ripe it will be necessary to guard against excessive fire heat. At the same time sufficient warmth will be required to dry up any atmospheric moisture likely to cause injury to the berries by damp. A gentle warmth from the hot water pipes during dull, sunless weather is a necessity, with a moderate circulation of fresh air whenever the outside conditions will allow. If the borders appear to be excessively dry water should be given sparingly, and this work should be done in the forenoon when there is a promise of a fine day. Observance of these details will do much to keep the berries from shrivelling.

Pot Vines.—If very early Grapes are required preparations for forcing should be made without delay. If vines for the purpose have to be purchased they should be obtained at once from a reliable nurseryman so that they may receive the necessary attention. Vines that have been prepared for this purpose, as advised in a previous calendar, have ripened their growth much better than could have been expected, considering the lack of sunshine this season. They are now in a suitable condition to have all lateral growths cut back to the main cane by the use of a sharp knife. After each cut surface has become quite dry it should be covered with styptic to prevent bleeding. This precaution is necessary, especially if any doubt exists with regard to unripened wood, otherwise bleeding is almost sure to occur immediately the sap begins to flow. Examine each pot for faulty drainage, for on perfect drainage success largely depends. Remove all loose mulching material and add a top dressing of rich compost. This may be done in two ways, either by placing pieces of rough turf around the rims of the receptacles to hold the finer compost, or by arranging bands of zinc securely in position. This work is best done before taking the vines indoors. It is important that the vinery be cleansed thoroughly and the walls dressed with a coating of hot lime to destroy any lurking insects that may have sheltered therein. Even where bottom heat is available from hot water pipes it will be wise to plunge the receptacles in sufficient leaves and litter for the purpose of ensuring humidity in the atmosphere, which is essential to active growth in the early stages. Stand the receptacles on two bricks, allowing sufficient space between them for the water to pass away freely. Tie the canes as nearly horizontally as possible; this will cause them to break more evenly than if they are arranged in the positions in which they will eventually be grown. Unless the nights are very cold it will not be necessary to employ fire heat for a short time, and no harm will occur if the night temperature falls to forty-five degrees. On all sunny days a little top ventilation may be given for a short time, but the house should be closed early, when the vines should be sprayed with tepid rain water.

THE KITCHEN GARDEN.

By **Walter Y. Staward**, Gardener to Mrs. **John Feeney**, The Moat, Berkswell, Warwickshire.

Globe Artichokes.—The old stems of Globe Artichokes should now be cut down and any decayed leaves removed. Fork the bed over and place ashes or rough leaves around the collars of the plants to protect the crowns during the winter; only sufficient for protection from frost is necessary.

Autumn Broccoli.—The heads of the Broccoli are turning in very fast and damage from frost must be guarded against. Bend the large leaves well over the curds, or the plants may be pulled up by the roots and kept in a cool cellar for a considerable time.

Trenching.—A good portion of the kitchen garden should be trenched every year and the work may be proceeded with as the ground becomes vacant. This work should take precedence of all other. Rubbish should be wheeled on to the ground with a quantity of manure and worked into the soil; leave the surface as rough as possible. The frost will pulverise it and it will be worked much easier in the spring. After trenching apply a dressing of shell lime or, where the Onion crop is to be grown, a dressing of basic slag.

Celeriac.—When large enough for use, Celeriac may be lifted, trimmed, and stored in sand. Trim off the leaves and roots with a sharp knife.

Celery.—The last earthing up of late Celery should be done when the ground is dry. Bank a sufficient quantity of soil around the plants and work some of it round the stems with the hands. The tighter the soil the better will the Celery keep.

Tomatos.—Plants intended for furnishing winter supplies need careful attention. Maintain at all times a fresh, buoyant atmosphere by using fire heat and admitting, whenever possible, a little fresh air in the house. Water the plants carefully, keeping them on the dry side. Use artificial manure occasionally when the fruits are swelling. It is advisable to pollinate the flowers with a camel-hair brush. Plants grown for fruiting early next year are ready for transferring to 2½-inch pots. Place them on a shelf as near the roof-glass as possible to keep them dwarf.

THE ROSE GARDEN.

ROSE PHYLLIS BIDE.

The beautiful climbing Polyantha Rose Phyllis Bide (see Fig. 100), received the Award of Merit of the National Rose Society on September 20, 1923, and a Gold Medal of the N.R.S. on August 6 of this year, when shown at the provincial exhibition of the Society at Glasgow. A further distinction received by this pretty Rose was the award of the Cory Cup as being the best new seedling climbing Rose of the year raised by a British grower; as the competition for the Cory Cup has been open at all the meetings of the Society in 1924, the winning of this distinction stamps it as a Rose of more than average merit.

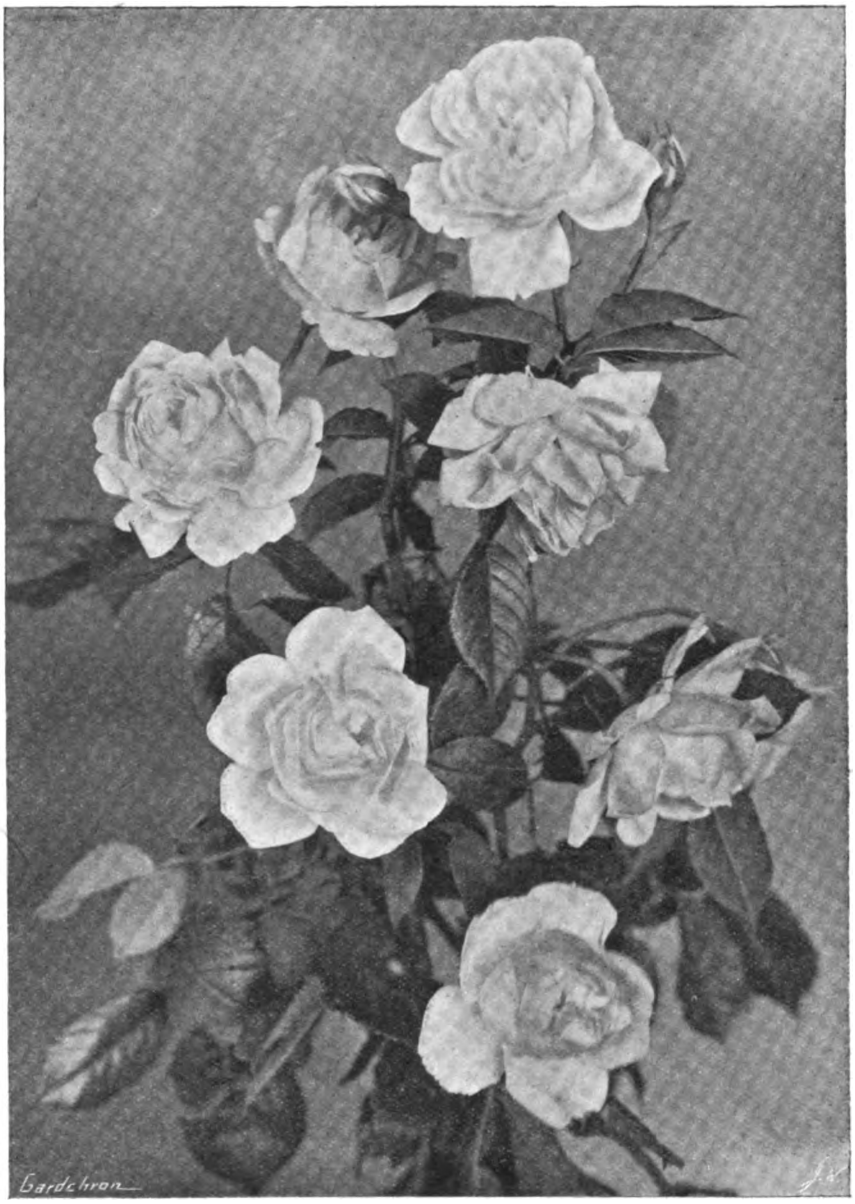


FIG. 100.—ROSE PHYLLIS BIDE.

It is a climbing Polyantha of the type of the dwarfer Carienvogel and has flowers of a most delightful colouring, rose-pink on a golden-yellow ground. The plant is said to attain a height of about six feet. As will be seen on reference to the illustration the flowers are almost double and produced in loose sprays.

A coloured illustration of the variety is given in the *Rose Annual* for 1924, facing p. 34, on which the variety is described. It was raised by Messrs. S. Bide and Sons, Farnham, who are to be congratulated on the popularity it has attained.

BULB GARDEN.

IRIS UNGUICULARIS.

The first flowers of Iris unguicularis opened here on September 24. After the dull, wet weather of the past months, the early flowering of this Iris came as a surprise.

The roots were planted in their present position at the foot of a south wall in February last, and this recent disturbance would naturally be thought to defer the production of flowers. The clumps were very strong, having previously been growing in open garden soil where they had produced no flowers. In planting, a quantity of old mortar and broken bricks was mixed with the soil around the roots and the whole made very firm. The foliage is very strong and dark green in colour. This instance seems to prove that the plants may be transplanted with advantage, although one often hesitates to move established clumps of Iris unguicularis (stylosa). *C. Ruse, Hyde Gardens, near Luton.*

FLOWER GARDENING AT ALDENHAM.

The Fuchsia was at one time extensively employed for bedding, but in recent years it has been displaced by other subjects for the purpose, although it is doubtful if the change has been for the better, for Fuchsias are amongst the most floriferous of plants, easily propagated and cultivated, and they succeed in most garden soils, provided the situation in which they are planted is fully exposed to sunlight. It is not surprising that the former generations of gardeners held the Fuchsia, both for indoor and outdoor cultivation, in such high esteem, and novelties were sought for eagerly and purchased at what would now-a-days be considered very extravagant prices. Mr. James Lye, whose name is perpetuated in some of the best varieties still in existence, and Mr. Banks of Sholden Vicarage, Kent, were noted raisers of Fuchsias, which were grown and sold in large quantities by the late Mr. Henry Cannell and other nurserymen of his day. These remarks are prompted by a visit to Aldenham House, Elstree, the residence of the Hon. Vicary Gibbs, where several formal beds near the residence are planted entirely with Fuchsias over suitable ground-work.

The whole of the beds are objects of great beauty and the plants seem to have enjoyed the dripping summer, for at the time of my visit they were in the best of health and carried a profusion of blooms. Each variety was massed and the following are the names of the sorts employed:—Corelli, over a ground-work of Alternanthera aurea and edged with Echeveria secunda glauca; Madame Cornelison, a variety that is practically hardy, with a white corolla and carmine sepals, one of the best of all Fuchsias for bedding. This particular bed has a groundwork of Iresine Lindenii Improved and this also had a neat edging of Echeveria; Brilliant, over Alternanthera aurea; Lye's Own, with a groundwork of Iresine Lindenii Improved; Thalia, with a ground of Mesembryanthemum and other beds of Ballet Girl and Novelty, all remarkably effective.

One of the long, narrow borders, forming part of the scheme of these flower beds was exceedingly charming, planted with three rows of Fuchsias, the golden Wave of Life at the back, and next to this a row of Mauve Queen with Novelty in front, set off by an edging of blue Lobelia. I have seen nothing amongst flower beds this season that appealed to me so much as these masses of Fuchsias, and certainly the use of these plants for a long, narrow border is to be highly recommended.

A Mixed Border of Tender Plants.

The broad border near the house, which is usually planted with scented-leaved Pelargoniums is this year furnished with a variety of mixed plants, and the effect is very pleasing. Mr. Beckett has associated the various subjects with great skill and taste and the general effect is so good that I recommend it to other gardeners. The following plants are included in this mixed border:—Aloysia citriodora, Alyssum maritimum variegatum, Calceolaria amplexicaulis, Celosia plumosa (yellow and crimson); Cuphea miniata, C. platycentra; Francoa ramosa, Gazania hybrida, G. hybrida variegata, Helichrysum microphyllum, Heliotrope Lord Roberts, Heliotrope Miss Nightingale, Lobelia cardinalis, L. fulgens, L. Cambridge Blue and L. Dark Blue; Lilium lancifolium, L. l. rubrum, Mesembryanthemum roseum, Mignonette Giant, Nemesia Suttonii, Nigella Miss Jekyll, Pelargoniums (standards) Scarlet Unique, Mrs. Jenkins, Mrs. Kingsbury, and P. crispum variegatum; Pelargoniums (bush) Black Vesuvius, Lady Plymouth, Sir Percy Blakeney, and P. crispum variegatum: perpetual-flowering Carnations, Petunias, Plumbago capensis, Salvia coccinea, S. patens, S. uliginosa, and Veronica Andersonii variegata.

In the circular beds Calceolaria amplexicaulis, Swainsonia alba and standard Heliotropes have been used over a carpet of dwarfer subjects and these also have presented a very gay appearance all the summer.

A large, oval-shaped bed near to the Rose garden has been planted with Coltness Gem Dahlias and if any doubts exist as to the suitability of this dwarf scarlet Dahlia for bedding, the success of this bed at Aldenham is sufficient to demonstrate its adaptability for the purpose.

Although I have visited Aldenham on many occasions I have never seen the gardens in a more beautiful condition, for everything, both indoors and out, is in a state of perfection, and apart from the interest afforded by the arborescent species, many of which are in fruit or assuming their glorious tints of autumn, the gardens everywhere are bright with flowers, including Michaelmas Daisies, Roses, Dahlias, Phloxes, Pentstemons and even late Delphiniums. *T.*

PUBLIC PARKS AND GARDENS.

PARKS AND GARDENS OF CAMBERWELL.

The Borough of Camberwell includes the congested area of Peckham and the more rural portion of Dulwich.

Camberwell Green, where for many years and until 1855 the famous Camberwell Fair was held, is now slightly over two acres, and a well-kept garden, wherein large numbers of people seek shelter and rest from the turmoil of traffic outside. A number of trees give kindly shade and comprise fine specimens of the London Plane; a good example of Catalpa bignonioides, Ash, Almonds, Pyrus, Chestnuts and Elm. The flower-beds and borders, at all times bright and effective, are filled in summer with such subjects as Antirrhinums, Coreopsis, Heliotrope, Fuchsias, Liliums, Pentstemons, Begonias and Dahlias, including a large bed of the variety Coltness Gem, which, at the moment of writing, is a mass of blossoms and forming a perfect blaze of colour.

Brunswick Park, about four acres in extent, is used for sports and games. A long border of Pelargonium Maxime Kovalesky is attractive by its distinctive colour and continuity of flowering.

The Central Library Garden is situated at the rear of the building in the Peckham Road. It is a very secluded garden, and although only two roods in extent, its position is such as to afford a much appreciated retreat for the general public. Two flower-beds at the front of the building are planted with Dahlia Coltness Gem, while the borders and beds in the garden are bright with herbaceous and bedding plants.

Leyton Square Garden is off the Peckham Park Road and near the well-known Old Kent Road. This garden is of about two acres and was originally laid out by the Metropolitan Gardens Association. The bulk of the space is given up to the children and for net ball games in connection with the schools. A large patch of the white Dahlia Queen Victoria is quite an attraction in this garden square.

Varcoe Road Garden adjoins the Borough of Bermondsey. Gardening here is a matter of difficulty owing to the close proximity of large gas-works, the fumes from which scorch and disfigure all vegetation. The ten-week Stock is the most satisfactory subject here and brightens the place considerably.

From this gas-laden atmosphere a trip to the more congenial spot known as One Tree Hill would be appreciated. This hill was known formerly as "Oak of Honour," and it is a tradition that Queen Elizabeth once enjoyed lunch under a certain Oak tree, the supposed stump of which is preserved to this day. From the top a splendid view of London and the surrounding country may be obtained. This garden is some six acres in extent.

Dulwich Library Garden is very pleasantly situated and near Dulwich Park. Two attractive beds are planted with Pentstemon Daydream, edged with variegated Veronica, and others are filled with Antirrhinums, Asters, Chrysanthemums, &c. One long border is planted with Dahlias and an effective display will continue until these plants are cut down by frost.

Sunray Garden has been taken over quite recently by the Council in connection with their housing scheme and is in process of being laid out. Its area is about six acres, and includes a large pond; the place is nicely wooded. The kingfisher is often seen here during the winter—a sight, I believe, rather uncommon so near London.

At Grove Lane Nursery, the whole of the space is used for raising the plants required by the Department. Three greenhouses, some eighty feet in length, have been built by the Council during the past few years, and considerable frame space is available.

Other small spaces controlled by the Department are:—St. George's Churchyard, Sumner Road, South Grove, Addington Square, and Cox's Walk.

The Department, in addition to general Park work, has the control of seven thousand roadside trees and employs a regular staff of twenty-five men. *H. G. King.*

HARDY FLOWER BORDER.

LATHYRUS SIBTHORPII.

Rarely catalogued and perhaps difficult to procure, Lathyrus Sibthorpii is a very fine plant and worthy of inclusion in a collection of the choicest of hardy plants.

It is a true herbaceous species and grows to a height of from two to three feet; the somewhat straggling growths furnished with narrow linear, greyish-green leaves bear small, brick-red flowers, which are both persistent and freely produced over a long season.

Seeds are produced by the plant in quantity and these offer the readiest means of propagation; the plant prefers a sunny position and a rich, well-drained loam.

I know little of the history of this somewhat rare Pea, but I have an idea that the late Mr. H. J. Elwes was responsible for its introduction or re-introduction into British gardens. *Ralph E. Arnold.*

[Lathyrus Sibthorpii is a synonym of L. undulatus; it is a native of the Dardanelles coastal region.—Eds.]

ASTER HYBRIDUS LUTEUS.

This new yellow Starwort bloomed well with me after being in bud for a long time. It promises well, provided it is not spoiled by raisers endeavouring to produce varieties with larger blooms. As it is, it has clusters of small, good yellow flowers on stems which on my plants were about eighteen inches high. For cutting it should be very acceptable, as the sprays are quite elegant and informal. The plant is of good, erect habit and has required no staking. In a normal season it would probably be considerably earlier, but the weather we have experienced for some months retarded many plants. In any case, Aster hybridus luteus is worthy of attention from growers of hardy flowers. *S. Arnott.*

MIMULUS BARTONIANA.

This hardy herb of Irish origin and comparatively recent introduction is a robust grower, quickly forming large masses in rich soil. In the herbaceous border it is most effective when the clumps are of moderate dimensions.

The growths, which should be supported at an early stage, quickly hide the stakes and form circular mounds, three feet high, smothered with flowers from the ground upwards.

The flowers are old-rose colour, the throat yellow, with carmine coloured spots. *F.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

In the list of plants—a very long one—that have hitherto baffled my sedulous efforts to establish them, Mertensia sibirica, Echinacea purpurea and Veronica longifolia subsessilis hold a foremost place. Over and over again have I bought them, always with the same result; they flower the first year or two, and have done with it. I should be most grateful if any one who has succeeded in growing them permanently in the humid west will be so kind as to prescribe treatment for them.

Is there any family of plants so protean as the Knotweeds (Polygonum)? Between the aspiring P. baldschuanicum, which races up the nearest support to a height of twenty feet and veils itself for months with a mist of pearly bloom, and the lowly P. vaccinifolium which now, in mid-October, sheets the rocks with bright rose spikes of Heath-like flowers, there are many good garden plants, but there are also several terrors. In a woodland there is no lovelier herb at this season than P. polystachyum, whereof the flowers, like fine lace, fill the autumn air with fragrance; but let it once obtain a footing in the flower garden, and one is up against the abomination of desolation. P. sachalinense is quite as bad in that respect; but planted well isolated on a lawn, and the far-flung runners mown over so soon as they show above ground, it makes a splendid object, not by reason of its flowers, which are not very conspicuous, but of its great flapping leaves with crimson midribs, eighteen inches long and half as much broad, which turn bright yellow in October. P. campanulatum is a more recent introduction from the far East, not such a dangerous spreader as the two last-named species, and clad with a long succession of pink and white blossom, beginning early in August and continuing till the first sharp frost. All the Polygonum family possess some privy property rendering them immune from the all-but omnivorous rabbit. This makes them specially valuable for open woodland.

One result of the cold, wet season from which we are escaping is the exceedingly sparse flowering of Amaryllis Belladonna. As for Lycoris squamigera, its abundant leafage in spring has not produced a single flower stem; whereas Nerine Bowdenii is in profuse bloom.

Among the flowers of late autumn none supplies a more lavish display of blue than the North American Aconitum Fischeri. This Monkshood does not seem to be so well known as it deserves to be. It is of the freest possible habit, increasing to large clumps in ordinary garden soil, an example which I cannot coax A. Wilsonii to follow. Planted in front of a ten-foot Cercidiphyllum, its massive spikes of lightish blue show in fine contrast with the rich carmine foliage of the little tree.

It may be noted of Cercidiphyllum that there is much variety in the species, some strains of seeds producing plants that assume gorgeous autumnal colouring, while others have proved disappointing through the foliage turning to a uniform yellow only. We were lucky here in happening to receive seeds of the better strain, so that Cercidiphyllum is the most brilliant object in our garden and woods at this season. Rowans, wild Cherry and Azalea may vie with it in glow, but the special merit of Cercidiphyllum consists in the long period of change. Plants that began weeks ago by turning purplish-maroon are now clothed in vermilion; others that started in yellow raiment now display scarlet. Moreover, when brought into the house the leaves do not fall like those of Parrotia and Vitis inconstans, but remain on the sprays till they wither.

Probably the cause which interferes with the more frequent use of Colchicum in pleasure grounds is the mass of foliage which is thrown up in spring and makes an untidy lawn when withering in early summer. But it is worth some trouble in that respect by reason of the compensation made by such fine flowers as those of C. speciosum and C. Bornmuelleri. Of course, one cannot have the flowers if the foliage is mown in spring; but there are plenty of open spaces in woodland where mowing is not done early that might be made what we Scots term, "a sicht for sair e'en," in autumn by furnishing them with Colchicum bulbs in July. Swiss hill pastures are gay with them at this season, Swiss cattle, I suppose, having learnt to avoid them; but our British herds are not so sophisticated, and Colchicum being dangerously poisonous ought never to be planted in our meadows One of the richest colour effects at present is a spread of soft crimson Colchicum speciosum in the turf at the foot of an old bush of Fuchsia globosa. *Herbert Maxwell, Monreith.*

NOTES FROM WISLEY.

At this time of the year marked variation may be observed in the intensity of colouring to be seen in the leaves of many trees and shrubs which are regarded as identical species or varieties, and the reason for this is by no means clear. One would expect that autumnal colouring would be regulated by some factor, such as the nature of the soil, the amount of sunlight received, or the health of the tree, but a practical examination of the conditions affecting various specimens fails to point conclusively to any one or more of these factors as determining the brilliancy or the lack of colour. In the Wisley rock garden are two trees of Amelanchier vulgaris which colour well in the autumn. One of these, however, is invariably more brilliant than the other. Similarly, in the wild garden there are two trees of Liquidambar styraciflua, one of which is now a most vivid crimson, while the other is merely flushed with red. In both of the foregoing examples the more highly coloured tree is in the wettest position, and in the case of the Liquidambars, the tree which in this year of rain has coloured to a slight degree has in previous years been almost devoid of autumnal colour; yet it is generally believed that light soils and a dry position are favourable to rich colouring.

Among the shrubs on the rock garden, Prunus pumila, Rosa virginiana and Hydrangea scandens are now very attractive. The leaves of the last are bright yellow. In the new shrub borders the little known Prunus melanoscarpa is conspicuous on account of its red leaves. It is a low growing shrub bearing white flowers in May.

Under the Oaks and Birches of the wild garden is a bed of Rhododendron basilicum which has just been top-dressed. This unusual-looking Rhododendron has remarkably large leaves, which are glossy green above and furry-brown beneath; it was raised from seeds sent from China. It has not yet flowered in England, and it is doubtful whether it will ever do so in the open. Unprecedented growth has taken place this year owing to the rain, but this progress may be nullified by the winter's frosts and cold winds.

Several Ericas are flowering in the Heath garden, including E. Watsonii, E. Mackayi, E. ciliaris and its white variety; Genista maderensis, a half-hardy Broom, is also flowering here.

The beautiful, fruiting Barberries, which have a garden of their own, are now at their best. Among other charming hybrids Autumn Beauty is particularly good.

Cases of Rose-graft disease, which brings about the wilting and death of the young Rose graft, have been brought to the notice of the Mycological department at Wisley. The plants in question were purchased from abroad and were accompanied by a certificate of freedom from disease!

The Royal Horticultural Society has agreed to accept the recommendations of the Agricultural Meteorological Society with regard to weather reports and to take two readings at the Meteorological station each day instead of one.

The equipment of the Wisley weather station is being supplemented by the addition of an anemobiagraph, an instrument which automatically records the force and direction of the wind, and which will replace the cup anemometer in use at present. *J. G. White.*

ORCHID NOTES AND GLEANINGS.

LAELIO-CATTLEYA COLMANIANA.

The original record of this beautiful hybrid appears in *Gard. Chron.*, September 29, 1900, p. 240, from particulars I took from the late Mr. F. Sander at St. Albans in the presence of the plant when it was flowering for the first time, the parentage being given as L.-C. Arnoldiana × C. Dowiana aurea. L.-C. Arnoldiana secured a First-Class Certificate at the Royal Horticultural Society, June 9, 1891, and was recorded by the authorities of the time. But when preparing the lists of awards, the standing of L.-C. Arnoldiana was referred to the nomenclature sub-committee, who decided that it was a form of L.-C. eximia (L. purpurata × C. labiata Warneri), as I had suggested in the original report. Thus the plant referred to passed into the Royal Horticultural Society's List of Awards as L.-C. eximia Arnoldiana with the date of the original award retained.

L.-C. Colmaniana (L.-C. Arnoldiana × C. Dowiana aurea) formed a fine feature in the group staged from Gatton Park, September 23, 1902, and has frequently been shown from there since, but no award has been recorded for it. Later, in Sander's *List of Orchid Hybrids*, L.-C. Colmaniana (C. Dowiana × L.-C. callistoglossa) appears a record which does not agree with the Royal Horticultural Society's estimate of the plants originally shown.

L.-C. Colmaniana var. Vivid (C. Dowiana aurea × L.-C. callistoglossa) raised by Messrs. Flory and Black, Slough, and carefully recorded, shown at the Royal Horticultural Society's Meeting on October 7, seems to prove that the old forms of L.-C. Colmaniana are L.-C. eximia hybrids of the class more recently named L.-C. Ivanhoe, and those of the L.-C. callistoglossa × Dowiana cross, as shown by the markedly different flowers of the set raised at Slough, are quite distinct.

It is interesting to note that Messrs. Sander's original record for L.-C. Arnoldiana was from L. purpurata, seed parent, Cattleya labiata pollen bearer, the seeds having been sown in 1881 (*Gard. Chron.*, June 13, 1891, p. 741).

BRASSO-LAELIO-CATTLEYA EILEEN LOW.

This handsome hybrid, which was recorded in *Gard. Chron.*, September 27, p. 212, is again flowering with Messrs. Stuart Low and Co., at Jarvisbrook, its large mauve flowers with intense crimson-purple lip showing it as one of the brightest of its class. It was obtained by crossing L.-C. Henry Greenwood (L.-C. Schilleriana × C. Hardyana) and Brasso-Cattleya Digbyano-Trianae. It should be noted that the B.-L.-C. Miss Eileen Low (L.-C. Chantinii × B.-C. Digbyano-Trianae) recorded in *Gard. Chron.* list, May 24, p. 302, is of the same origin, the L.-C. Chantinii, recorded on the Continent, as resulting from L.-C. elegans × C. Hardyana, being L.-C. Henry Greenwood (L.-C. Schilleriana × C. Hardyana). The confusion of L.-C. elegans (C. Leopoldii × L. purpurata) with L.-C. Schilleriana (C. intermedia × L. purpurata), both natural hybrids, often occurs, especially in Continental hybrids. For example, the original L.-C. Berthe Fournier (L.-C. elegans × C. Dowiana) proved to be a L.-C. Schilleriana cross and consequently L.-C. Lucilia. The original record of L.-C. Berthe Fournier (L.-C. elegans × C. Dowiana) was well represented by the showy batch raised at Westonbirt, several of which have received First-Class Certificates at the Royal Horticultural Society's meetings. *J. O'B.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

VIOLAS OR TUFTED PANSIES.

THE origin of things is a subject of universal interest, but to plant-raisers the origin of any race of garden flowers is doubly interesting because the knowledge may save them much time and trouble. When information is given in the handwriting of those who laid the foundations of a race of flowers, the human interest is added, and becomes intensified when it is remembered that those who wrote did so long after they had achieved success, and since writing have passed away in the fullness of years and of honour.

In reviewing the history of garden Violas, two names spring to mind—Mr. James Grieve, of Edinburgh, and Dr. Charles Stuart, of Chirnside, and we are glad therefore to be able to publish a letter from the former and some notes by the latter of these famous florists, thanks to Mr. W. Cuthbertson, who recently found them in a batch of old floricultural correspondence from these "elder brethren."

[COPY]

THE EARLY GARDEN VIOLAS.

The Cottage, Pilrig, Edinburgh.
7th March, 1893.

Messrs. Dobbie and Co., Rothesay.

Gentlemen,—Your letter to hand this morning, and I am happy to see that you propose to publish a few notes on the History, Cultivation, etc., of the Viola. I have pleasure in enclosing a photo of myself, but you know I am not a member of the firm of Dicksons and Co., but a humble servant. Well, I came to Dicksons and Co. in January, 1859, and started as Pansy grower in February, 1860, but all my life I have been a keen florist and collector of all rare plants. In 1862 I started to cross Viola lutea (from the Pentland Hills, Midlothian), and the ordinary Show Pansy (as we had no Fancy Pansies then). In 1863 I got Viola amoena * from Moffat (Ericstane) and crossed it with the Purple Pansy. Then I got V. cornuta and crossed it with "Dux" Show Pansy—the best of the seedlings I named Vanguard. V. stricta, an Indian species * and very rare, I crossed and got all the stricta varieties such as Ariel, Bullion, Stricta alba, Stricta lutea, Stricta Cygnet, Stricta Azurea, and a host of those with no blotches or rays. All the Blue Bell type are from V. amoena. V. amoena magnifica and Favourite (figured in the *Floral Magazine* in 1872) are the ones I got all my best purples from. V. lutea, found in the Pentland Hills, was the one I got all the yellows from, as well as all my best whites, blues, etc. (without blotches), almost thirty years ago.

By this time (1865) we had cultivated the Cliveden Bedders, blue-white, purple, blue, etc.; these, you may say, were played-out Show Pansies, good growers and free flowerers.

Imperial Blue was a cross between a yellow and a purple Self Show Pansy and was the original of our Blue Self Show Pansies. The first one I ever saw shown in a competition box was Celestial, raised by myself about 1873.

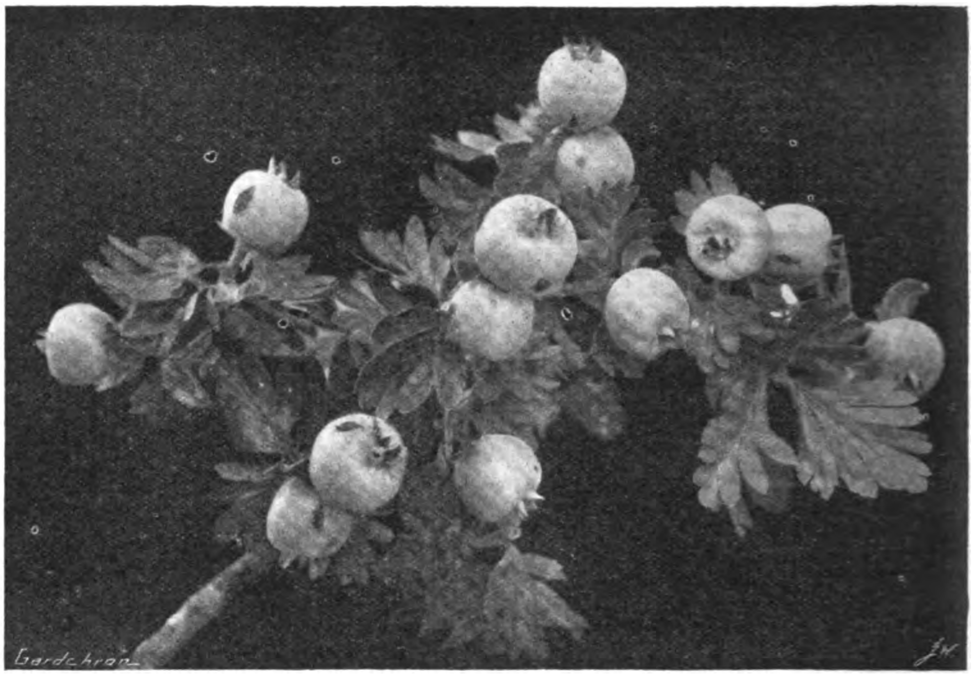


FIG. 101.—CRATAEGUS TANACETIFOLIA FRUITING BRANCHLET.

In 1867 I got six plants of Viola cornuta Perfection and crossed every bloom with everything I could lay my hands on, and I got about 700 seedlings in all out of this lot. I had such varieties as The Tory, Lilacina, Canary, White Perfection, Holyrood, Waverley, Dicksons' King, etc., as you will see figured in the *Floral Magazine* of 1872.

V. Grievii, Pallida, Golden Gem, etc., were raised from V. lutea. Sovereign was a cross between Golden Gem and Golden Bedder, a yellow Show Pansy, sent out by E. G. Henderson, London. Countess of Kintore was raised by Dicksons and Co. and is of pure German origin, that is, out of German seed.

Some years I have had as many as 15,000 seedling hybrid Violas planted out to select from. It is an error to think that if you had a dozen seedlings all of them will be first-class. Some years I did not name one out of a thousand. About 1872 our sales ran into very big figures in the season, the prices ranging from 6/- to 30/- per dozen.

Holyrood, Acme, The Tory, Pilrig Park, Golden Gem, Sovereign, Grievii, Stricta alba, Stanley, Bullion, Mary Gilbert, D. Tennant, Distinction, Formosa, Ariel, Ajax, Blue Stone, Brilliant, Criterion, Eva, Emperor, Favourite, Glow, Lady Kirk, Modesty, Multiflora, Peach Blossom, Oriflame, Royalty, Souvenir, Virginalis, Merchiston Castle, etc., etc., were all seedlings raised by myself, and in addition to the above any odd and spare hours in the summer evenings were spent raising and propagating such flowers as Pinks, Carnations, Phloxes, Pentstemons, Delphiniums, Geraniums, Rhododendrons, Azaleas, Strawberries, Apples, Gooseberries and Figs. These have all been pets and have given me many hours of joy; and I expect that James Grieve will be the leading Apple in Britain yet, although I may be under the turf before that is so. You can select or make what use you like of these remarks. As you all know I have had a deep love for flowers, fruit, shrubs and trees of all kinds since ever I could crawl on the ground, and although I have not the time I had to devote to these matters I never miss an opportunity of doing what I can.

What I feel a great sorrow for is the carelessness of the younger men; their happy ideas are short days, long pays, football, etc., not forgetting grumbling, and it is a great pity such is the case, but I trust to live to see more honest workers in the field. Careful hybridising and selection will yet produce millions of pounds to nurserymen and seedsmen and no end of enjoyment to many millions of the human race in all countries and climes.

I trust a kind providence will reward you for all the trouble, expense, etc., you are putting yourselves to in your work for the advancement of floriculture and garden produce in general. Scotch nurserymen are not, to my idea, so enterprising as they were. I call the founder of your firm to witness. I had a letter from Mr. Dobbie, and his book on Potatos, the other day, and was glad to hear that he is still so full of interest and life. I was at Peebles ten days ago seeing my father and mother, and

---

[* *i.e.*, *V. lutea* var. *amoena*, Wats.—EDS.]

[* V.B. Wittrock in *Acta Horti Bergiana*, II., No. 7 (1895), p. 74, writes:—From Dicksons and Co. of Edinburgh, a statement has reached me that *Viola stricta* has been used for the same purpose ("Ariel," Stricta alba," "Indiana," etc., are said to be derived from this species); but it is evident that this *Viola stricta* cannot be the *Viola stricta* of the botanists. Dicksons and Co. declare that their *Viola stricta* is an Indian species. In conseqence of this statement I wrote to the author of *The Flora of British India*, Sir Joseph Hooker, concerning the matter, and in reply he says: "There is certainly no Indian species remotely even allied to the cultivated Pansies."—EDS.]

they, like him, have no idea of giving up the struggle for existence; they are full of happiness and life, although both are long over the allotted span of three score and ten.

Yours very truly,
J. GRIEVE.

RAYLESS VIOLAS.

Hillside, Chirnside.
April 6, 1898.

Dear Mr. Cuthbertson,—In 1874 I took pollen from a garden Pansy named Blue King, a bedding variety then in fashion, and applied it to the pistil of Viola cornuta, a Pyrenean species. There was a podful of seed, which produced twelve plants, which were well taken care of. The next season they flowered and all had blue flowers, but with a good tufted habit. I again took the pollen from a pink garden Pansy and fertilised the flowers of my first cross, with limited success. The seed from this cross gave me more variety in colour of flower and the same tufted habit of growth, which evidently came from the V. cornuta influence.

The best plants from this cross were propagated and grown on; some of the plants being sent to Chiswick for trial, after all Viola growers had been invited to send their best there, to see how they would thrive in a southern climate. After these had been in the ground for some time I received a letter from a member of the R.H.S. Floral Committee, enquiring how my plants had been raised, as they were entirely different in growth from all the others sent in. In reply I wrote exactly what I have already stated, and heard no more of the matter till the autumn of 1875, when I was rather surprised to be informed that I had got six First-Class Certificates and was first in the competition, Messrs. Dicksons and Co., Edinburgh, being second. Nothing more was done at this time, beyond growing the plants I had already raised, and sowing the seed from them in a bed, broadcast. They all had more or less rayed flowers.

A floral ally seeing one of these certificated plants—a fine white self—remarked, "if you could only get that flower without rays in the centre, I think you would find it to be a great improvement." Although I kept a sharp look out on the seed beds it was ten years before I succeeded in finding a really rayless Viola. In the year of the Queen's Jubilee, while walking round the seed bed I saw what I had been seeking—a pure white, rayless self. The plant was there and then pulled to pieces and every bit propagated. It was a warm summer night and the perfume from the blooms at once attracted my attention. The next summer I had a little plantation of this rayless self, and a wealth of blooms. A box of flowers was sent to Mr. W. Robinson, the Editor of *The Garden*, who at once recognised them as representing a new strain, and promised to figure the variety. Such is the true history of Violetta, one the most popular of the rayless, tufted-Pansy family.

Violetta has proved the mother of thousands of a rayless race, some better, some worse than the parent. Violetta pollen placed on a white self with few rays gave Sylvia, too well-known to require description. Sylvia crossed with a Peacock Pansy gave me Border Witch, a singular flower, which in its best dress, in moist weather, is very striking. I found, however, that this Pansy crossing was not very profitable, for out of a hundred and fifty seedlings, Border Witch was the only one without rays.

Mr. Robinson has more than anyone advanced the claims of this strain of rayless Violas. Many of the varieties have been figured in *The Garden* and in other magazines, and he has placed me under a deep debt of gratitude in dedicating to me (a humble amateur) a volume of his beautiful publication, in acknowledgment of original work.

CHARLES STUART, M.D.

TREES AND SHRUBS.

CRATAEGUS TANACETIFOLIA.

A SLOW-GROWING, somewhat fastigiate tree, with rigid branches and corrugated stem, Crataegus tanacetifolia—the Tansy-leaved Thorn—is one of the most ornamental of of Thorns. It belongs to the orientalis or Azaroli section, a small group of Thorns which have large, round, or Pear-shaped fruits that are good to eat, either yellow or red. The red fruits are generally produced on trees with a spreading, or drooping head, the yellow on fastigiate species or varieties. The leaves are wedge-shaped, three cleft or more and there are few or no spines.

C. tanacetifolia is closely allied to C. orientalis, but differs from that species by its yellow, solitary, sessile fruits, its gland-toothed leaves, and glandular, laciniate, or Moss-like bract or bracts attached irregularly about the fruit. The dense corymbs consists of six to eight fragrant, white flowers with red anthers, the individual flowers being one inch across; the large calyx lobes, which are glandular serrate, are covered with greyish felt.

The large, globose, yellow fruits are downy, one inch or more across, with somewhat the scent and taste of an Apple; and, as already mentioned, with laciniate, conspicuous Moss-like bracts attached sometimes at the base, while there is generally one half way, or even more up the sides of the fruit as may be seen in Fig. 101. The leaves, which are hairy on both surfaces, are obovate, cuneate, with five to seven narrow, oblong lobes, which are glandular serrate, particularly towards the points, while the young shoots are clothed with thick, grey felt, which remains partially on the year-old wood.

This species is a native of Asia Minor and Syria, and according to Tournefort, who writes of it as being the size of an Oak, his Armenian companions collected and ate the fruits.

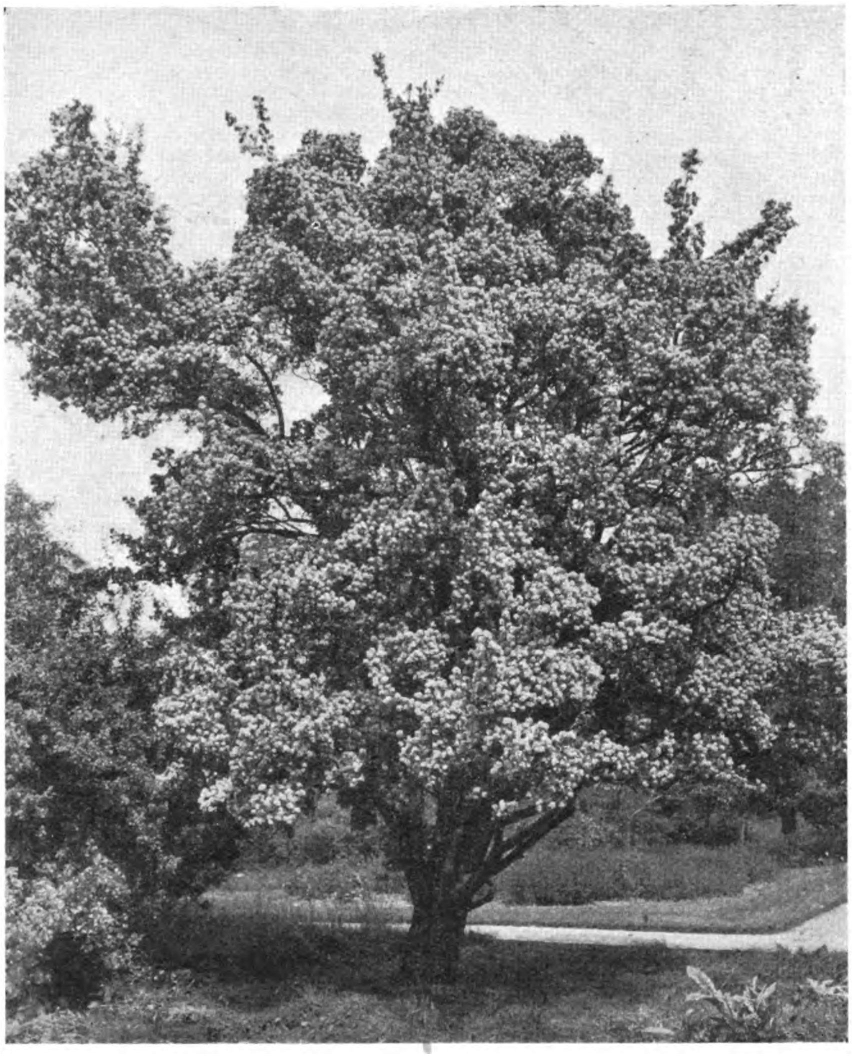


FIG. 102.—CRATAEGUS TANACETIFOLIA.

A fine specimen in the Cambridge Botanic Garden.

The tree here illustrated (Fig. 102), at the Botanic Garden, Cambridge, is a good specimen, being twenty-six-and-a-half feet in height, with a stem five feet three inches in circumference at one foot from the ground. It has made very little increase in height for some years, as all the points of growth have become spurs, producing flowers and fruits.

From the beginning to the middle of June this tree is an attractive feature when in flower, while it is also ornamental during the end of September and beginning of October, when laden with its large, yellow, Apple-like fruits, which unfortunately soon fall from the tree when ripe. *F. G. Preston, Botanic Garden, Cambridge.*

HARDY FUCHSIAS.

There are a few Fuchsias, which, even in the colder parts of these islands, will live and thrive in the open air and add greatly to the attractiveness of the border or rock garden; except in the extreme south and south-west districts and one or two other favoured parts, the winter's cold will kill them to the ground level, and it is therefore advisable to afford some little protection to the roots, such as a covering of leaves or ashes, but I do not remember a plant succumbing to the most rigorous of winters.

In Devon, Cornwall, and the Isle of Wight, the plants are evergreen, and some, such as F. Riccartonii, attain the dimensions of shrubs; so grown, they are notable ornaments in any garden, more especially during the autumn months.

F. Riccartonii, perhaps the best known of the hardy Fuchsia, is most attractive, and except where the stems are persistent the usual height is from four to six feet, the whole plant becoming a mass of attractive, green-foliage, reddish stems and scarlet and Plum-coloured flowers. The flowers are produced throughout the summer and late into the autumn. This Fuchsia is attractive as an isolated specimen or in bold groupings, the latter being the most effective in the large garden.

F. gracilis (F. macrostemma gracilis) may be described as a smaller F. Riccartonii; it is even more graceful than the last-named, producing a quantity of light, drooping growths, smothered with the big blooms, which are identical in colour with those of F. Riccartonii. In the warm, south-western counties, F. gracilis will reach a height of from six to ten feet, but here in the Cotswolds, two to three feet is more nearly its limit. Its flowers are produced throughout the summer and autumn. F. gracilis was introduced from Mexico in 1823 and figured in the *Bot. Mag.*, 2507, as F. decussata; it is an ideal plant for the large rock garden and there is a variegated form.

F. corallina or F. exoniensis is perhaps the finest of the hardy Fuchsias; the large leaves are stained with purplish-crimson, the undersides being entirely crimson, while the young stems are of a similar colour. The flowers are large, rather more sparingly produced than in the foregoing species; the corolla is dark Plum colour, the sepals crimson. Under favourable circumstances, this Fuchsia attains a considerable height, with persistent stems, but usually it is a low-growing plant, from eighteen inches to two feet or rather more high, with a delightful weeping habit, which makes it just the plant for covering a large rock. F. corallina provides a patch of lovely autumn colour and is invaluable in the rock garden.

Fuchsia pumila (F. macrostemma pumila) is a very small plant, rarely reaching one foot in height; it may be described as a miniature F. gracilis and is well-suited for planting in the alpine garden.

F. procumbens is a creeping plant and its chief attraction is its large, oval, crimson berries, which are persistent for many weeks; the flowers are small, yellowish, and blue, and the leaves are small and round. This species is hardy, except in the severest of winters, and makes an ideal plant for a basket or the stages of a cool house. It was introduced from New Zealand in 1874 and is figured in *Bot. Mag.* t. 6139.

Several other Fuchsias may be grown successfully in the open air, and probably the majority of them will succeed in the warm south-west counties. Mme. Cornelison, with white corolla and red sepals, is very attractive and lovely in most places.

Cuttings offer the best means of propagation, and non-disturbance after planting conduces to the welfare of these very attractive plants. *Ralph E. Arnold.*

RHODODENDRONS.

V.—RHODODENDRONS IN THE GARDEN.

(*Continued from page* 264).

It will obviously take time and experience to prove all the species; and I have selected a few of the best established, in the certainty that, though others may be hardier, these are at any rate hardy and available. Later experience may suggest a different selection when the newer species have been proved.

In the meantime R. apodectum is a six foot shrub—or smaller—with little trusses of deep rose or crimson flowers, somewhat fleshy.

R. neriiflorum is a more erect plant than the former, reaching,—at least in nature—a height of six feet or less, according to conditions. But when happily situated it will flower when it is but two feet high and a few years old. It has scarlet flowers and glabrous leaves of a cheerful green.

Of the other species in cultivation but not widely cultivated, R. sanguineum grows two feet to three feet high. The rather small, oval leaves are covered below with a silver-grey skin and are gathered into distinct rosettes at the ends of the twigs. The campanulate flowers are pure scarlet, fleshy, and few, and loosely arranged so as to hang down. It is a plant of the open screes from high, but not too high, altitudes.

R. herpesticum, a near ally of the last, is rather different. The trumpet-shaped flowers are larger and more blood-orange in colour; and the leaves are not obviously in rosettes.

R. haematodes has scarlet flowers and rounded leaves, covered below with dull rust-coloured wool.

Then there are R. aemulorum, R. euchroum, R. aperantum, and R. floccigerum, any or all of which may be substituted for the above, as they gradually find their way into cultivation. At any rate two or three of these unusual species—for the knee high procumbent habit is not one of the commonest—should be included in any collection. R. aemulorum is a small tree, fifteen feet in height.

I come now to yet larger species, more worthy of the name bush or shrub—the size of plant, from six to ten, or even fifteen feet high, which used to be grown in the old-fashioned shrubbery. The Victorian shrubbery was a sort of plant penitentiary where badly behaved plants were herded together to keep them out of mischief, or out of the way of their better comported associates. Or it was a gap in the garden which had to be filled with something—anything; or it hid the rubbish heap and the tool shed. Privet, Portugal Laurel, Cherry Laurel and Yew are the gloomy outcasts; their sad lot may be alleviated by the presence of a Laburnum or Lilac, put in jealously to give a specious air of brightness and design to the whole; though, failing to leaven the whole, their isolation is only the more complete.

But there is no excuse for that sort of desperation now-a-days, at least outside the big cities. The past two decades have seen the introduction of so many fine hardy shrubs that anyone who neglects them to grow these mournful evergreens, deserves to suffer the blight which goes with them.

First, the "Triflorum" Rhododendrons, hardy species with deciduous foliage and masses of flowers, spotted and flushed—white, pink, yellow, bluish-violet. They are slim shrubs or stout bushes, from five to fifteen feet in height; and they are undoubtedly destined shortly to be counted amongst the most popular hardy shrubs in the country. I select six as representative of the sixty-odd species described.

R. yunnanense has white or flushed pale flowers with a rash of crimson or dark cinnamon spots diced over the base of the upper corolla lobes. It flowers in April or May in this country—not too early, so that it stands a good chance of coming through without being cut by late frosts.

R. ambiguum is a much smaller plant, not exceeding, if it attains, five feet. The flowers, which are lemon-yellow or greenish, faintly spotted, appear in May. The habit is neat and compact and the small leaves are bronzed on the under surface with scales. But the colour is not good. It grows about eight feet high. Like most of the "Triflorums" it is very free-flowering, the truss being three- to five-flowered and loose. A form I found in the Tibetan Marches flowered a second time in September when the leaves were turning orange; the contrast between the pale flushed flowers (almost lilac) and the glowing foliage was splendidly beautiful.

R. Augustinii, in its best forms, has bluish violet flowers, but they are more often a dull, morose blue, or dirty violet, or washy lavender with yellow spots on the upper lobe; for those who enjoy anything with blue in it, however impure, R. Augustinii may be recommended; but only occasionally are its efforts to be bluish really crowned with success. It is a shrub of six feet or thereabouts. It comes from central China.

R. lutescens has lemon-yellow flowers and in size resembles the last. It comes from western China.

R. Davidsonianum has rose-lavender flowers or white, flushed rose. It also is a shrub attaining some six feet in height.

R. lochmium has white flowers flushed violet and faintly tinged with yellow at the back where it is spotted with ochre-brown. In this species the leaves are persistent. Bush of six feet to twelve feet. It came up originally as a "rogue" under Mr. E. H. Wilson's number 1220, labelled villosum. Any person or persons possessing 1220 of Mr. Wilson may therefore have raised R. lochmium, which is often to be seen in private gardens. But this little twig takes a long time to go to market and the best way of obtaining a specimen seems to be to love your neighbour as yourself—if he possesses R. lochmium. *F. Kingdon Ward.*

(*To be continued*).

HORTICULTURE AT THE BRITISH EMPIRE EXHIBITION.

ROSES AT WEMBLEY.

The exhibition authorities at Wembley do not seem to have attached much, if any, importance to our national flower, for, so far as we could discover, only three varieties have been planted by them. Red Letter Day appears occasionally, and in the two little sunken gardens, practically in the centre of the great exhibition, Ellen Poulsen and a somewhat similar dwarf Polyantha variety, feebly represent our most popular flower.

Visitors to the exhibition must go to the far east of the grounds to see any Roses worth while. But when the horticultural exhibition section is reached the glorious beds of Roses planted by Messrs. Dobbie and Co., are an ample compensation for the journey. Their Rose beds, set in rich green grass and surrounded by a neat hedge of Lonicera nitida, have been very beautiful throughout the summer, and even now, at mid-October, there are plenty of lovely blooms. Messrs. Dobbie and Co. have wisely filled each of the many beds with one variety only, so that the numerous visitors who have admired the garden have been able to judge the habit and colour value of a great many sorts. Chief amongst those of yellow shades are Christine, Golden Emblem, Lady Hillingdon, Lady Elphinstone, Mrs. Wemyss

Quin, Mrs. Frank Usher, Rev. F. Page Roberts, and Souvenir de Madame Boullet. These are all particularly desirable varieties, and it would be a difficult matter to select any as being of greater value than the others. At this season the brilliant crimson spines on the stems of Golden Emblem could be considered an additional attraction to its richly coloured blooms.

Pink Roses are very numerous, and at the moment the most floriferous are President Bouche, Los Angeles, Mrs. Henry Morse, Columbia, Madame Abel Chatenay, Elsie Beckwith, and the taller growing Dorothy Page Roberts.

The Queen Alexandra Rose, of gloriously vivid colouring, is in a class by itself, and few would fail to pause and admire it in the garden of Messrs. Dobbie and Co. where it is an ideal bedding variety. The plants are scarcely more than eighteen inches high, of bushy habit, and apparently ever-blooming. The chaste Ophelia, in a bed near by, is a fitting companion.

General McArthur, that most popular of Roses, is very prominent amongst those of deep rich colouring. Others of red colours include Col. Oswald Fitzgerald, K. of K., Lieut. Chauré, and a charming bed of Donald McDonald.

In the adjoining garden of Messrs. G. Jackman and Son, which, like that of its neighbour, is always well kept, the Roses are also set out in beds of one variety. Here the beds are larger, and consequently the varieties are fewer, but there are plenty to choose from. The gorgeous, glowing-pink Betty Uprichard, which seems to have been the Rose of Roses at most of the shows this year, is a splendid bedding variety, though as it approaches three feet in height it may be considered fully tall for some tastes, but its glorious colouring and freedom of flowering amply compensate for this. Lady Inchiquin, a contemporary variety, of vivid orange-cerise shading, is also very successful. Los Angeles, Madame Abel Chatenay, Mrs. Henry Morse, and Madame Edouard Herriot are here well represented.

Large beds of Hoosier Beauty, still of intense velvety crimson colour and passing sweetness, and the valuable Covent Garden have received a great deal of admiration. Benedicte Sequin, a yellow variety of vigorous habit, is well worth a place in any garden.

In and around their pleasant little formal Rose garden, Messrs. R. Wallace and Co. have used a considerable number of the best of the more recent varieties. This collection is of special value, for many Rose lovers have had an exceptional opportunity ot seeing the new Roses growing naturally. Each bed is plainly labelled with the name of the variety and its raiser. Dorothy Howarth, a dwarf Polyantha, raised by Messrs. Bees, Ltd., makes a splendid bed and would be equally valuable as an edging to a Rose border. It bears prodigious quantities of quite large, double flowers, much the shape of the old Cabbage Rose, and of delightful coral-pink colour shaded with shell-pink. America, the vigorous, large-flowered pink Rose ot perfect shape, occupies a large bed. Adonis, Oriel, Diana, Macbeth, and Sybil are all good garden H.T. varieties also raised by Messrs. Bees, Ltd.

Chief of Messrs. Alex. Dickson and Son's novelties are Betty Hulton, saffron-yellow with a golden heart; Ethel Somerset, shrimp-pink and very fragrant; Lord Allenby, a large bloom of bright crimson colour; and W. E. Wallace, sweetly scented and deep yellow. The newer varieties of Messrs. S. McGredy and Son include Capt. Ronald Clerk, an attractive and fragrant variety; Ethel James, somewhat of Isobel type, though rather paler and prettily waved; Florence L. Izzard, a very fragrant pure yellow; Mabel Morse, the rich yellow Rose of the season; and Vesuvius, a single Rose of brilliant colour and pleasant fragrance.

Other raisers' varieties are Ma Fiancée (Rossem), a very dark and fragrant Rose; Mrs. Beckwith (Pernet-Ducher), deep yellow, paler at the tips of the petals, and William Kordes (Kordes), rich yellow, heavily shaded with red.

Messrs. S. Spooner and Sons have planted a large number of popular varieties, many as standards, and also in borders, in association with their fruit garden. While this form does not give the colour mass value of beds of one variety, it illustrates a great variety of useful Roses. Their chief sorts are Ophelia, Edward Mawley, Isobel, George Dickson, Hugh Dickson, Lady Hillingdon, Madame Ravary, La France, W. C. Gaunt, Pharisäer and Sunburst.

As two central beds in their very attractively designed fruit garden, Messrs. Laxton Bros. have planted their Pink Delight, a dwarf, single, cluster-flowered Rose of great charm, while Messrs. Seabrook and Sons have borders of Ellen Poulsen, bearing a profusion of bloom, around their commercial fruit plantations.

NURSERY NOTES.

MR. R. C. NOTCUTT, WOODBRIDGE.

A NURSERY is, according to the writer's always convenient lexicon, "a place where all plants are fostered and their growth promoted," and while this cannot be claimed so far as the "all plants" are concerned of any nursery garden in the world, it is easily within measurable distance of the truth in respect of Mr. R. C. Notcutt's various cultures at Woodbridge and Martlesham. To-day, in nurseries, as in other places, we are steadily travelling farther and farther along the road of specialisation, because we are assured that it leads to betterment in quality, and because, mayhap, it leads to betterment in profits. The impressiveness of the place where one may see a few hundreds of thousands of Roses, or of fruit trees, or of Palms, or of Ferns, or of some other one kind of plant, cannot be questioned for a moment, but he would be a bold man indeed who dared to affirm that either of these places equals in interest and educational importance those wherein "all plants are fostered and their growth promoted."

The Woodbridge collections do not comprise all plants that are grown in glasshouses, but out-of-doors there seems to be a place for everything; everything occupies its temporary place, and what is more everything is in splendid health and condition. Mr. Notcutt is a clever landscape gardener who is ready not simply to draw the plans of the new garden, but to interpret the plans afterwards, and finally to take from his own cultures the rock plants, the border plants, the trees and shrubs, in fact everything that may be required to furnish it artistically, effectively and usefully.

Continuing to a little greater length in generalities the outstanding feature, beyond the completeness and health of the collections, is the scrupulous cleanliness which characterises the rather more than a dozen acres at the home nursery, the twenty-five acres at Martlesham and the fifty acres under fruit and Roses at The Farm.

Mr. Notcutt's principal personal interest lies in the flowering shrubs and trees, with hardy herbaceous and evergreen plants and rock plants in the second position. The collection of hardy flowering, foliage and evergreen shrubs and trees is complete to the point of repletion, and there does not appear to be a single one of outstanding importance that will not grow in the home nursery at Woodbridge or at either of the other centres. Mr. Notcutt's admiration of that superb Crab, which was raised in East Anglia by Mr. Chas. Eley, of East Bergholt, and named Pyrus Eleyi, is unbounded, and with ample justification. In flower, in foliage and in fruit it is distinctively and attractively handsome, and for either feature alone it would be entitled to its place in every garden. It is as hardy as any plant well can be, and its glowing brightness in flower, foliage and fruit compels appreciative attention. Near by at the Farm stood forth prominently Prunus cerasifera Blireiana fl. pl., with its richly tinted foliage, and whose soft pink, semi-double flowers are so beautiful in the spring.

Of equal merit in its proper place, though of much lowlier stature, is Berberis acuminata, notable for its brownish-yellow flowers, black fruits, long, lance-shaped leaves springing from brilliant red wood, and spreading habit. Equally interesting were Buddleia variabilis magnifica and B. v. Pink Beauty, Cerasus serrulata Ukon, Cytisuses, Cotoneasters in such extraordinary variety that they seem to be never ending, and Lilacs, which include every variety that can justify claim to real merit. The extraordinarily long, intensely green formidably hard leaves of Osmanthus armatus, whose creamy-white flowers cluster in the axils of the leaves in autumn, are of great interest.

Those who seek gorgeousness in the garden should see the Woodbridge herbaceous borders planted to create a continuous, harmonious display of colour from the earliest days of spring to the latest days of autumn; they teach what knowledge of plants and intelligence in placing them can do in developing the delightful amenities of the garden. Behind these there are the nurseries of all kinds of hardy and rock plants in hundreds of kinds, thousands of varieties and scores of thousands ot individuals. The visitor may see, too, the charming rock and water garden and the Yew-hedged theatre, with its natural green room in which Shakespearian plays are acted from time to time—it may be noted in passing that Mr. Notcutt does not lay claim to having built this theatre, indeed he could not well do so when the hedges have a reputed age of upwards of 150 years!

In turn those who wish for the fragrant and exquisite charms of the Rose can find them in thousands at Martlesham and The Farm; there are all the best varieties in perfect condition. And finally there will be those whose tastes run in more utilitarian directions and they will go direct to the fruit trees. All young, healthy, free from insect and fungous pests, and on specially chosen, suitable stocks, these comprise all hardy kinds, in every conceivable useful shape, from the recently inserted Strawberry runner to the handsomely trained Peach, Nectarine, Plum, Cherry, Apple and Pear, as well as the indispensable Currants, Gooseberries, Raspberries and other berries. *W. T.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 78-84).

(*Continued from p.* 270).

ENGLAND, N.W.

CUMBERLAND.—The fruit crops generally, with the exception of Plums, Damsons and Cherries, are good. The Apple crop is decidedly good. Early Pears helped to make this crop an average one, later and more valuable sorts being very thin. Among small fruits, Black Currants showed the best return. Dry east winds, when the trees were in flower, were very insistent. Frogmore Prolific Apple, which was in flower when east winds prevailed, has a splendid crop. Alongside it is a Court Pendu Plat Apple, which did not flower until we had more genial weather; this is a failure. All crops are very late this year. The soil here is a fairly heavy loam on a gravelly bottom. *J. Service, Holme Hill, Gardens, Dalston.*

Westmorland.—There was a splendid show of bloom on all fruit trees and bushes here in the spring, but unfortunately, owing to bad weather, Plums in particular suffered when in bloom and Apples are only an average crop. Small fruits were very good; Strawberry crowns suffered much here last winter from long spells of frost. *James Jeffrey, Lowther Gardens, Near Penrith.*

ENGLAND, S.W.

Cornwall.—For the second year in succession our fruit crops are very poor, except in the case of small fruits. Apples are much below the average yield; Pears and Plums are almost nil. The weather here in the extreme south-west during the whole of the period of flowering was one continuously unbroken spell of boisterously wet conditions. The pollen had no chance of dispersing owing to its saturated condition. Fungous diseases are rampant, especially "brown rot." However, there is a fair amount of growth but the absence of sunshine up to moment of writing gives one little hope of ripe wood. Our hours of sunshine have been uncommonly few. *Harry Williams, Tolvean, Redruth, Cornwall.*

Somersetshire.—The Apple crop is under the average; some sorts have fair crops, notably Worcester Pearmain, Cox's Orange Pippin, Adams's Pearmain, Warner's King, Newton Wonder, and Bramley's Seedling, but many trees are without fruits. Pears are bearing well and look promising. Plums were mostly under the average, the exception being those on walls where we had fair crops of some sorts. Damsons, too, are only a moderate crop. Peaches and Nectarines yielded good, average crops, but Apricots were poor. Figs, however, on outside walls, look very promising. Strawberries, which flowered profusely, ripened only an average crop. Bush fruits were all very good, especially Black Currants. Sweet Cherries were good but Morello Cherries only moderate. The soil is reddish in colour, rather heavy, with a scaly stone subsoil. *James Glasheen, Hestercombe House Gardens, Taunton.*

—All fruit trees in this district flowered well, but the fruits of some varieties of Apples failed to set, while other trees in the same orchard are laden. There is an orchard of bush Apple trees here in which there is hardly a single failure; yet on the other side of the garden is a larger orchard of standard trees where there are many of the same varieties without a single Apple. On the whole there will be a good average crop of Apples. Pears, and all small fruits were abundant, although later than usual, owing to the cold and wet spring. Plums, as a rule, do not do well here: Cherries have done better than is generally the case. *Grigor Roy, Halswell Park Gardens, Bridgwater.*

Gloucestershire. The Apple crop is, on the whole, below the average, though some varieties are producing heavy crops, notably James Grieve, The Queen, Mère de Ménage, Stirling Castle and Annie Elizabeth. On the other hand the usually persistent cropping variety, Lane's Prince Albert, has a poor crop, as has also Warner's King. Of a large number of trees of Cox's Orange Pippin a few only are bearing light crops. Pears are promising and a fair, average crop. Of Plums, a few trees of Greengage and Coe's Golden Drop have fair crops, but all the rest are a complete failure, as also are Damsons. Outside Peaches and Nectarines, however, are cropping well, and are more promising than for some years past. Cherries were thin and of poor quality. Strawberries and Raspberries have been abundant. Currants of all kinds were good and above the average yield. Gooseberries were rather fewer than usual. *F. J. Clark, Westonbirt Gardens, Tetbury.*

—Some varieties of Apples in these gardens are carrying very good crops, such as Worcester Pearmain, James Grieve, Lord Derby, Cellini Pippin, Fearn's Pippin and Ribston Pippin, but such sorts as Cox's Orange Pippin, King of the Pippins, and many others are rather scarce. I have never seen a stronger and healthier blossom on the trees, but during the blossoming season, which lasted but a few days, much blossom was damaged by two heavy thunderstorms on May 19 and 20, the amount of rain being 1·22 inch and ·93 inch respectively. Pears on wall trees have very good crops, but Pears are not so good in the open. Gooseberries, Raspberries, Red and Black Currants, were exceptionally fine crops of fine quality. Strawberries and Morello Cherries were good average crops. Plums and Damsons are not so plentiful as usual. All fruit trees are very clean. The soil here is very heavy on clay and cracks badly. *A. W. Pearce, Sudeley Castle Gardens, Winchcombe.*

——The Apple crop is almost nil. The trees looked promising in spring, but appeared to fail at the last moment. Spraying was almost impossible on account of wind and rain. I think the loss of the crop is due to caterpillar and Pyslla. Pears are fairly good. Early Prolific Plum trees had a good crop; other varieties of Plums are scarce. Bush fruits were good, Black Currants, very good; Strawberries were satisfactory; Filberts are abundant. *John Banting, Tortworth Gardens, Falfield.*

—Amongst outdoor fruit crops this year Apples and Plums are the most disappointing. Trees of the former bloomed well and the outlook was promising but the set was very indifferent, and while some varieties, notably Bramley's Seedling, are cropping well in places, in others there are very few Apples. There was very little flower on local Plums, i.e., Blaisdon Red and Yellow Pershore, but in places there are good crops of Prolific, Victoria and Czar. Pears are nothing like so plentiful as they promised to be when the trees were in bloom, but the Pear crop appears to be about an average one. Gooseberries were excellent and the crop of Black Currants was the best known for years. *G. H. Hollingworth, Shire Hall, Gloucester.*

Herefordshire.—With the exception of Plums and Cherries, the fruit crops are over the average, and very good. Apples were attacked by Winter Moth, but not severely, and the trees are very healthy. The sorts carrying heaviest crops are (Cooking) Lane's, Stirling Castle, Newton Wonder, Hambling's Seedling, Hormead's Pearmain, Bismarck, Stones, Seaton House, Warner's King, Sandringham, Bramley's Seedling, Lord Derby, Golden Spire, Frogmore Prolific, Golden Noble and King Edward VII. (Dessert) King of the Pippins, James Grieve, Mannington's Pearmain, Charles Ross, Ellison's Orange, Cox's Orange Pippin, Allington Pippin, Adams's Pearmain, Worcester Pearmain, Rival, Margil and Lady Sudeley. The crop of Pears is over the average, and the trees are very healthy. The sorts doing best are Le Lectier, Conseiller de la Cour, Joséphine de Malines, Beurré de Naghin, Santa Claus, Louise Bonne of Jersey, Doyenné du Comice, Pitmaston Duchess, Nouvelle Fulvie, Thompson's, Conference, Durondeau, Blickling, Madame Treyve, Beurré d'Aremberg, Marie Louise d'Uccle, Beurré d'Amanlis, Émile d'Heyst, Magnate, Marguerite Marillat, Beurré Alex. Lucas, and Beurré Superfin. Our soil is a sandy loam on red sandstone. *Thomas Spencer, Goodrich Court Gardens, Ross.*

Worcestershire.—Atmospheric conditions at the time when fruit trees were in bloom appeared ideal. Pear trees were full of flowers, especially the early varieties, and they are carrying a good crop of clean fruits. Plums were a heavy crop and appeared to set well. Apples are as good a crop as last year. Gooseberries were splendid, also Black Currants and Red Currants. We had plenty of Strawberries, but their flavour was only moderate. *Geo. H. Emmett, Hill Crest Gardens, Evesham.*

A DISCUSSION ON APPLES.

During the first day of the Royal Horticultural Society's fruit and vegetable exhibition, a discussion took the place of the usual 3 o'clock lecture in the Lecture Room. The Chairman of the Fruit and Vegetable Committee, Mr. C. G. A. Nix presided and he was supported by Mr. E. Bunyard, a member of the Council.

The following dessert varieties of Apples were discussed: many members present at the meeting testified to the all-round excellence of the variety Ellison's Orange, and it was stated that good reports had been received of this variety from all parts of the country. Mr. Bunyard considered that Orleans Reinette, which is known sometimes, but incorrectly, under the name of Winter Ribston, is one of the best of dessert Apples. He stated that the tree is a robust grower, hardy, a fair cropper, and does well in any form of training. The flavour of this variety is excellent and, in Mr. Bunyard's opinion, this Apple is not grown so extensively as it should be in gardens.

The variety Rival Mr. Basham considered the best of Mr. Chas. Ross's introductions. The fruit is of good flavour and generally it is of high quality. The tree is a strong grower and adaptable for any form of training. It is considered by market growers a suitable variety to grow to follow Worcester Pearmain. In the opinion of several growers present this variety is not liable to be affected much with black scab disease. The fruits should be gathered as soon as they are large enough for use, for it is inclined to become too large for market if allowed to hang to attain its fullest development. As the flavour is soon over it is best picked before it is fully ripe.

The next variety discussed was Paroquet, and Mr. A. H. Pearson stated that it was a good grower and cropper, but others considered that, although it is a very pretty Apple, the tree is not suited to heavy soils. Apparently this variety does not grow strongly enough on the paradise stock. Egremont Russet was considered one of the finest of dessert Apples and the best of the russet type. The tree crops when in a young and also in an old stage, but it was considered that young trees give the best results. This variety is of excellent flavour.

St. Everard Pippin was considered to be best picked and eaten direct from the tree. It is not suitable for market, but it is to be recommended for cultivation in private gardens, the flavour of this early Apple being excellent. Charles Ross, although a dessert variety of rather large size was considered to be a very profitable Apple for market. It is especially suitable for cultivating on poor land. It is grown a good deal in the North of England and is a popular market variety in those parts. St. Edmund's Russet is best eaten when freshly gathered from the tree. From the discussion it was obvious that few cultivated this variety. The new Laxton's Superb is not sufficiently generally cultivated at present for many to know its merit, but it is undoubtedly a fine late dessert Apple with a future. St. Cecilia Mr. Basham considered to be a sturdier grower than Cox's Orange Pippin, and in the opinion of many it is a fine late dessert Apple well worthy of extensive cultivation. The new variety S. T. Wright apparently is not sufficiently in cultivation for those who were present to express any opinion of it, indeed, few appeared to have heard of it.

The variety Arthur Turner is said to do well in most parts of the country, but is not always a good cropper, and Mr. Pearson stated that he preferred Charles Eyre to this sort. Monarch was considered by some to be better than Bramley's Seedling, as the fruits are said to require less sugar in cooking. It is a good cropper on young trees and grows well. Herring's Pippin (Fig. 103) was considered to be a good dual-purpose Apple, useful either for dessert or culinary purposes. Mr. Pearson described it as first class, of upright growth, good both for dessert and cooking, and an Apple with a future.

The varieties enumerated above were on the chairman's list for discussion, but on the suggestion of members of the audience the merits of the following sorts were discussed:—Cutler Grieve, which is stated to be an outstanding cropper and suitable as a succession to Worcester Pearmain for commercial purposes. This Apple, however, is said to contract black spot badly in some places, although not in all. John Standish is a late Apple of striking colour, but is not at present grown in many places, and it was considered that not enough was known about it to arrive at any decision. The variety Rosebery is said to be a very heavy Apple, but some thought that it was inferior for dessert purposes and too small as a culinary variety. This variety was said to have a great fault of dropping its fruits, and it also cankers badly and does not always colour well. It is said to be unsuitable for clay lands, but in a favourable medium is a good garden Apple.

HOME CORRESPONDENCE.

Freesias Planted Out.—In addition to the trial of Freesias outdoors mentioned by Mr. C. Ruse (page 218), I may state that at least one trial was made by Mr. James Mayne, when gardener at Bicton, about the beginning of the present century. Freesia refracta alba was the variety used, probably because it was the only common one at that time. The bulbs were planted in a border near a house wall, amongst various other plants. They passed the winter safely and flowered, but were dwarf and the flowers not so pure white as under glass. I have seen other South African bulbs planted out on an elaborately prepared border in front of a wall facing south, and some of the species were a fair success. In my opinion, most South African plants start into growth too early for our climate. The protection of cold frames gives better results, as in the case of Ixias. *J. F.*

Mange-tout.—To anyone having an ordinary, everyday knowledge of French, there ought not to be much difficulty over this word. In its primary sense it comes from *manger* to eat and *tout*, all—as shown in the Editorial note on p. 272; but like many other words *manger* has a secondary meaning. Roughly interpreted, *mange-tout* means, "You can eat the lot." More politely, perhaps, it might be rendered, "wholly edible." I did not know there was a culinary Pea entitled to that description, but the meaning of the term will be easily understood when applied to a Bean like our Scarlet Runner or French Bean, in which one eats not only the Beans enclosed in the pod, but the pod as well. It is over the secondary meaning that Mr. Beckett appears to have tripped. *Un mange-tout* is a man who is a prodigal, a spendthrift, a waster, a squanderer, and it is easy to understand that it would be difficult for a person who did not know the primary meaning to apply any one of the definitions of the word in this sense to a Pea or a Bean. The only conclusion he could arrive at would be that "prodigal" meant the plant was a profuse or prolific bearer—but it does not. *Manger* does mean "to eat," but it also means something more in a figurative sense. It means to consume, to absorb, to dissipate. When a young man wastes his substance in riotous living it is expressed by *manger son bien*. *Manger ses mots* is to chew ones words so that they are ill-pronounced. Many other expressions are in use where *manger* has only the figurative meaning of "to eat." So in accepting "prodigal" as the English translation of *mange-tout* when applied to a Pea, and assuming that it meant very fruitful or prolific in its bearing or yield, Mr. Beckett has furnished another instance of the truth of the old saying that "a Dictionary is a very good servant but a bad master," and in no language does that apply with greater force than in French. *C. H. P.*

Rose Rust.—I should be glad of any information regarding the eradication of Rose rust. I have Rose trees in my garden from three different nurseries in Great Britain and Ireland, and amongst these there is a considerable amount of Rose rust this year; the affected plants have dried off and are dropping their leaves. Most of them are in a large walled-garden, but others in the pleasure grounds a considerable distance away are no less affected, including trees planted during each of the past three years. I like to bud some Roses myself and the batch of maidens (budded last year) are in vigorous growth and free from rust although close to older plants which are affected. I have visited several nurseries recently and found the maiden Roses there quite clean. My fear is that my trees of last year's budding will become infected next year, and, worst of all, those I budded this summer, which are new and expensive sorts. I am of course collecting and burning the infected leaves as far as possible, having found that July spraying with sulphide of potassium did not seem to check the spread of the disease. To collect every diseased leaf of Roses and seedling Briars is well nigh impossible, and I hope some feasible and effective means exists of getting rid of the pest. With regard to the stocks budded this year I should like advice from other Rosarians as to an effective spray to be applied when I cut the heads off the stocks next spring. *A. R. P., Cork.*

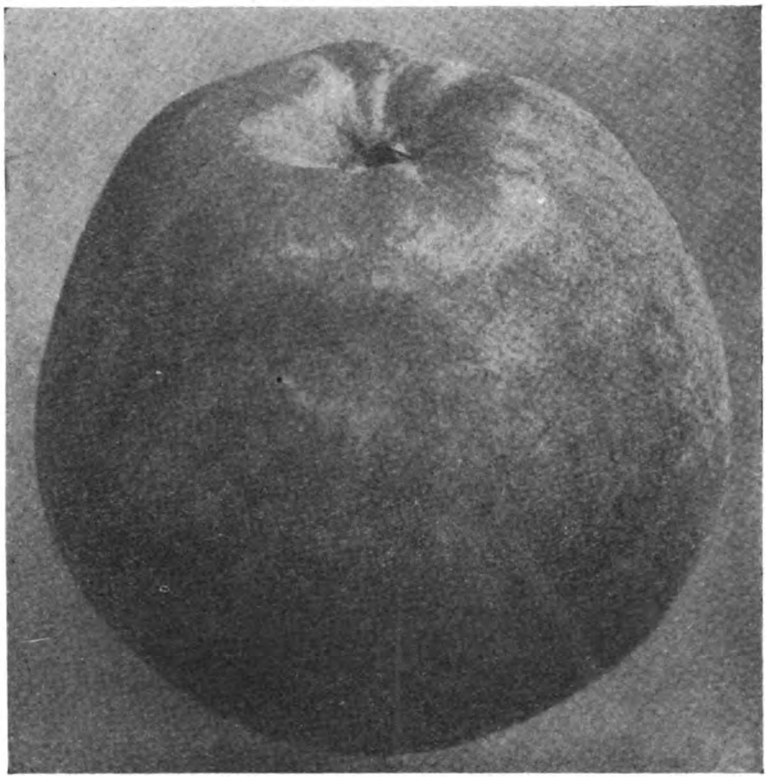


FIG. 103.—APPLE, HERRING'S SEEDLING.

SOCIETIES.

ROYAL HORTICULTURAL.

October 21 and 22.—The fortnightly meeting held on Tuesday last in the Vincent Square Hall was one of the best of the whole year, indeed the exhibition was likened, not inaptly, to a small Chelsea Show. The exhibition included fine groups of flowers, fruits, and vegetables. Orchids were especially prominent, as amateur exhibitors of these flowers were offered a valuable cup for competition by the members of the Orchid trade. In addition to the award of the Schröder Cup and the Orchid Challenge Cup, two gold medals were awarded to Orchids.

The collection of berried shrubs and autumn foliage from the Hon. Vicary Gibbs' garden included a number of new Chinese species, and was the centre of great attraction. There were also fine exhibits of Chrysanthemums, Dahlias, Roses, Nerines, and hardy flowers.

The Fruit and Vegetable Committee recommended two Gold Medals; to a collection of hardy fruits from Mr. J. C. Allgrove, and a collection of vegetables shown by Messrs. Sutton and Sons, respectively. Several awards were made to novelties by both the Orchid and the Floral Committees.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Messrs. Gurney Wilson (Secretary), Jas. O'Brien, C. J. Lucas, Frederick J. Hanbury, Arthur Dye, H. G. Alexander, J. E. Shill, H. T. Pitt, Fred. K. Sander, A. McBean, J. Wilson Potter, Henry H. Smith, T. Armstrong, John C. Cowan, S. W. Flory, and Chas. H. Curtis.

First-Class Certificates.

Laelio-Cattleya Queen Mary var. Colossal (*L.-C. Lustre* × *C. Peetersii*).—Four plants of this magnificent Westonbirt cross were shown, being the best of about twenty superb specimens in the group exhibited by Lt.-Col. Sir Geo. L. Holford. The heavily-flowered spike bore several immense flowers of perfect form, with sepals and petals reddish-mauve and the broad lip deep Tyrian purple. This grand cross was first flowered during the visit of Her Majesty Queen Mary to Westonbirt in August, 1922, and the Queen was pleased to allow the dedication of this grand Laelio-Cattleya in commemoration of her visit.

Laelio-Cattleya Queen Mary, Westonbirt variety.—A superb flower of large size, measuring nine inches across the broad petals, which are rich-purplish mauve, the broad lip being intense ruby-purple with yellow base. Also from Lt.-Col. Sir Geo. L. Holford, Westonbirt (gr. Mr. H. G. Alexander).

Awards of Merit.

Laelio-Cattleya Queen Mary var. Gloriosa.—A splendidly flowered specimen with perfect flowers of a rich rosy-mauve colour with ruby-crimson lip. From Sir George Holford.

Laelio-Cattleya Golden Light, Westonbirt variety.—The plant bore a strong spike of golden-yellow flowers with claret-red lip. From Sir Geo. Holford.

Laelio-Cattleya Nanon, var. Zebra (L.-C. Ivanhoe × C. Dowiana aurea).—From J. J. Bolton, Esq., Claygate (gr. Mr. S. Lyne), a pretty flower of intensely rich colour. The sepals and petals are deep vinous purple with silver lines at the margin. The lip is claret-crimson, with gold lines from the base.

Odontoglossum majesticum var. Admiration (eximium × percultum).—From Messrs. J. and A. McBean, Cooksbridge. A grand hybrid of rich Tyrian purple colour with distinct white margin.

Cattleya Clive var. ardentissima (Iris × Adula).—From Messrs. Sanders, St. Albans. One of the darkest and brightest coloured Cattleyas, the flowers being wholly bright vinous purple, and the lip claret-purple.

Laelio-Cattleya Linda var. superba.—From J. J. Joicey, Esq., The Hill, Witley, Surrey (gr. Mr. Mackay). A large flower of model form and probably the best of the favourite batch raised by Messrs. McBean. The plant shown had rich rosy-mauve sepals and petals, and broad, ruby-crimson lip with gold lines from the base.

Brasso-Laelio-Cattleya Alfred Mollet, var. Vivid.—From H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood). One of the largest and best of the class, with light rosy-mauve sepals and petals and well-rounded lip with a purple front.

Odontonia Stelpae var. maculata (M. Bleuana × Odm. Harwoodii).—From H. T. Pitt, Esq. The plant bore a spike of Odontoglossum-like flowers; the yellow colour is evenly spotted with red.

Laelio-Cattleya Pyramus var. Colossa.—From H. T. Pitt, Esq. A large flower with very broad purplish-rose sepals and petals and well-displayed crimson lip.

Groups.

Lt.-Col. Sir Geo. L. Holford, Westonbirt, Tetbury (gr. Mr. H. G. Alexander), staged one of the largest and most interesting of the many fine groups, every plant being superbly grown and flowered. The leading features in the collection were the many specimens of the superb Laelio-Cattleya Queen Mary, new forms of L.-C. Morvyth, Sargon, Neleus, Priam, and Mrs. Chandler. The Cattleyas included a series of the very dark Westonbirt forms of C. Fabia; C. Peetersii of the Westonbirt strain, both of the white and coloured type; C. Armstrongiae of fine colour and profusely flowered; C. Dirce magnificum and some fine white forms. The best Brasso-Cattleyas were B.-C. Digbyano-Warneri, Westonbirt variety; B.-C. Olympus and B.-C. heatonensis alba. The Cymbidiums included the noble C. Hanburyanum, and of Cypripediums there were Actaeus, Bianca, Viking, Shogun and Argo-Fairrieanum. This splendid exhibit was awarded the Schröder Challenge Cup and a Silver-Gilt Lindley Medal was awarded to Mr. Alexander.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), staged a bright group, a very attractive plant in the centre being the new Potinara Royal Purple (B.-L.-C. Gerald × S.-C. westfieldensis), a good flower of the deepest scarlet-crimson colour. The handsome Laelio-Cattleya Pyramus var. Colossus (L.-C. St. Gothard × C. Thurgoodiana) was also shown in fine form, with a good selection of other Laelio-Cattleyas, Cattleyas, and Odontoglossums, among which Odm. serapis var. Duke of York with nineteen flowers and buds was prominent. A good selection of Odontiodas, Cypripediums, and some interesting botanical species were also included in this exhibit (Silver-Gilt Banksian Medal).

Sir Jeremiah Colman, Bt., Gatton Park (gr. Mr. Collier) had an extensive group in which the autumn-flowering Cattleyas, especially the hybrids with the blue-tinted C. Bowringiana lilacina were well displayed, and many of the Gatton blue hybrids, including C. Portia coerulea and others were noted. Among the Laelio-Cattleya were L.-C. Lady Moore, a very pretty novelty; and L.-C. Henry Greenwood. Brasso-Laelio-Cattleyas were well represented, the model flower, B.-L.-C. Antoinette, Gatton Park variety, being superb in all its forms. Botanical species included Angraecum Ellisii, A. Eichlerianum and others; various rare Coelogynes, Bulbophyllums and Cypripediums (Silver-Gilt Banksian Medal).

J. J. Joicey, Esq., the Hill, Witley (gr. Mr. Mackay) staged a compact group, well arranged and containing many fine examples of Odontioda, Odontoglossum and Cattleya. Sophro-Laelio-Cattleya Don Juan is a pretty pearl-pink flower with a violet-crimson lip; forms of Cattleya Hardyana alba; C. Bellona, and C. Fabia var. Laelio-Cattleya Serbia and L.-C. Luminosa aurea were well displayed, with richly coloured sprays of Odontiodas and Odontoglossums arching over. Rare species included Coelogyne Veitchiana with long sprays of white flowers. This exhibit was awarded the Orchid Challenge Cup.

Messrs. J. and A. McBean, Cooksbridge, staged an effective group, including a selection of their beautiful Laelio-Cattleya Profusion and others of the fine forms raised at Cooksbridge. Among the Cattleyas, C. Cantuarie with clear white sepals and petals and deep violet lip, was very effective among a rich lot of Cattleyas with white and coloured flowers. (Gold Medal.)

Messrs. Sanders, St. Albans, had a very extensive and well-arranged group replete in good things, well-grown and artistically arranged, a feature at one end being a representative selection of Brazilian Oncidium not now usually seen. Among a fine selection of Cattleyas were C. Fabia brugensis, one of the richest in colour; white forms of C, Fabia and C. Enid. Among the Laelio-Cattleyas the new L.-C. Epic (C. Lord Rothschild × L.-C. Epicasta) is a bright addition to its class; L.-C. Roulers is a rich dark purple flower. Brasso-Cattleyas and Brasso-Laelio-Cattleyas were also well displayed, and a good selection of Cypripediums included the massive C. Cappamagna. (Gold Medal.)

Messrs. J. Cypher and Sons, Cheltenham, had a fine group staged in their usual effective manner. The centre was of fine Brasso-Cattleyas, Cattleyas and Laelio-Cattleyas with graceful Odontiodas and Odontoglossums. Among the species in the group the fine old Odontoglossum grande and the various forms of Dendrobium Phalaenopsis showed up well. A good selection of Cypripediums was also noted (Silver Banksian Medal).

Messrs. Cowan and Co., Southgate, had a specially attractive group in which their C. Hassallii and their new C. Mona, four forms of which were shown, were very attractive. Brasso-Cattleyas of fine quality were also included as well as a selection of good Laelio-Cattleyas (Silver-Gilt Banksian Medal).

Mr. Harry Dixon, Wandsworth Common, had an attractive group of well-grown Cattleyas, Laelio-Cattleyas and Odontoglossums (Silver Banksian Medal).

Messrs. Stuart Low and Co. staged a fine selection of Odontoglossums, Odontiodas, Cattleyas and Laelio-Cattleyas. Among the Cypripediums was a noble specimen of the bold C. Chrysostom giganteum, probably the largest and best form of this giant Cypripedium yet shown. C. Edwin Webster (Gaston Bultel × Aisne) was another fine novelty in the group, which contained good specimens in most of the sections, also an interesting lot of species (Silver-Gilt Banksian Medal).

Leonard Dixon, Esq., St. Albans, staged a selection of good Odontoglossums and Cypripediums (Bronze Banksian Medal).

Messrs. Armstrong and Brown, Tunbridge Wells, had a selection of new and rare Orchids, the central plant being the superb, pure white and yellow Odontoglossum Armstrongii, which stands alone in its class. Among a fine selection of Laelio-Cattleyas were specially handsome L.-C. Schroderae, L.-C. Ensign, one of the most beautiful of Laelio-Cattleyas; Cattleya Dionysius and other handsome forms, also a superb specimen of Vanda luzonica. (Special vote of thanks).

Floral Committee.

Section A.—*Present:* Messrs. H. B. May (in the Chair), J. F. McLeod, Hugh Dickson, Donald Allan, J. M. Bridgeford, E. R. Janes, M. C. Allwood, W. H. Page, J. B. Riding, D. B. Crane, Chas. E. Pearson, W. P. Thomson, W. B. Gingell, Wm. Howe, H. J. Jones, and W. D. Cartwright (Secretary).

Section B.—*Present:* Messrs. Gerald W. Loder (in the Chair), Sir William Lawrence, G. Reuthe, Amos Perry, W. B. Cranfield, E. H. Wilding, F. G. Preston, G. Yeld, T. Hay, R. C. Notcutt, E. A. Bowles, Clarence Elliott, R. D. Trotter, and Reginald Cory.

Awards of Merit.

Pyrus alnifolia.—A Chinese species which has been in cultivation about thirty years and produces sub-globose fruits measuring a quarter of an inch across, of orange-red colour. The specimen at Kew has attained noble proportions and this year has fruited very freely.

Pyrus Zahlbruckneri.—The fruits of this species are larger than those of the foregoing species, being from a half to three-quarters of an inch long and of bright crimson-red colour. This and the above species were shown by the Director, The Royal Gardens, Kew.

Berberis pruinosa.—This species is a native of S.W. China and bears brownish berries covered with a white bloom. It is an evergreen and the bright green leaves are ovate-oblong, strongly spiny-toothed and whitish beneath. Shown by the Director, R.H.S. Gardens, Wisley.

Nerine Mrs. Arthur Elwes.—A beautiful hybrid with large umbels of salmon-pink flowers. The petals are daintily waved and crimped, and the colour shades to a silvery hue towards their edges.

Nerine Miss E. Cator.—The flowers of this hybrid are of large size and good substance. The colour is a rich rose-carmine, and the broad petals possess a lustrous sheen. These two Nerines were shown by Col. Elwes, Colesborne.

Carnation Viscountess Hambleden.—The ground colour of this variety is a rich shade of Apricot-red, the petals being striped and flushed with deep red The flower is well-formed but lacking in fragrance. Shown by Viscount Hambleden, Greenlands, Henley

Carnation Winsome Wharton.—A medium-sized, perpetual-flowering Malmaison, possessing a strong Clove perfume. The ground colour is soft pink overlaid with markings of deep rose. Shown by Mr. J. R. Batty, Skelton-in-Cleveland.

Rose Phyllis Bide.—A delightful climbing Polyantha Rose which is described and figured on p. 281. Shown by Messrs. S. Bide and Son, Farnham.

Chrysanthemum Dorothy Wilson.—A medium-sized, incurved, Japanese variety of deep golden yellow colour. The texture and form of the flower are excellent. Shown by Mr. W. Roots, Cranford.

Chrysanthemum Gloriosa.—This is a large-flowered Japanese variety of deep bronze-yellow colour, the reverse size of the florets being of a buff-yellow tone. Shown by Mr. H. Shoesmith, Guildford.

Chrysanthemum Enid Elder.—The colour of this decorative variety is deep golden yellow and the bloom is of bold appearance without being coarse.

Chrysanthemum Jean Pattison.—A very charming decorative variety of an attractive shade of coppery-bronze, a colour which should prove exceptionally striking under artificial light.

Chrysanthemum The Wizard.—This decorative variety has previously received a First-Class Certificate from the National Chrysanthemum Society. It is a sport from Sorcerer, of deep bronze colour. The above three varieties of Chrysanthemums were shown by Messrs. Cragg, Harrison and Cragg, Heston.

Chrysanthemum Laddie.—This is a magnificent large-flowered Single with four rows of broad florets. The colour is bright yellow.

Chrysanthemum White Model.—Similar in shape to the foregoing variety, this bloom is pure white and of good outline. This and the above variety were shown by Mr. G. Carpenter, Byfleet.

Chrysanthemum Sulphur Queen. A fine Primrose-yellow Japanese variety, with flowers of great depth and size. Shown by Mr. Keith Luxford, Harlow, Essex.

Groups.

One of the features of the show was the collection of sprays of ornamental-leaved and berried trees and shrubs exhibited by the Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham Home, Elstree. About two hundred and fifty subjects were represented, and these were arranged on a long length of tabling approximately five yards wide and fifteen yards long. Some twenty or so large epergnes towering ten feet high were employed to break the level of the group, which was one of the most complete collections ever staged.

Of flowering specimens were a hybrid Escallonia obtained by crossing E. pterocladon and E. punctata, Ligustrum Quihoui, Berberis intermedia, Veronica Aoira, Potentilla fruticosa forma (Forest 15205), with yellow flowers; and Caryopteris Mastacanthus, blue. Euonymus aldenhamensis was particularly striking, being abundantly clothed with rose-pink fruits and the native E. europaeus and E. yedoensis were likewise very attractive. Amongst yellow-fruited specimens were Pyrus Mongeottii, Hippophaë rhamnoides foemina, Celastrus scandens, Taxus baccata fructo-lutea, Pyracantha Rodgersiania, Crataegus oxycantha fructo-luteo, while Loniceras, Berberis, Cotoneaster, and Pyrus species and varieties were well represented amongst scarlet-fruited subjects, some of the best being Cotoneaster frigida Vicarii, C. salicifolia rugosa, C. Henryana, Berberis vulgaris splendens, B. macrophylla, B. brachypoda Gibbsii, Pyrus firma, P. Aucuparia nana, Lonicera flava, and L. Maackii.

Other interesting fruiting sprays were Liburnum rhytidopyllum, with fully ripened black fruits; Symphoricarpus laevigatus, with large white fruits; Acanthopanax leucorrhizum scaberulus, possessing heads of black fruits; Photinia variabilis, scarlet; Rosa Moyesii, Lonicera pileata, purple; and Descaisnea Fargesii, with long, fleshy, slate-blue fruits similar in shape to a Pea-pod (Gold Medal).

Well-grown Clematis in pots were grouped in the corner of the Hall by Messrs. L. R. Russell, Ltd., and amongst the many varieties were beautiful specimens of Fairy Queen, white with pink bars; Marie Boissellot, a large white flower; Nellie Moser, blush-white with red bar; Snow White Jackmannii; Mrs. Cholmondeley, lavender tipped with purple; and the new Crimson King, bright ruby-red (Silver Banksian Medal).

Mr. J. Klinkert exhibited well-trained specimens of topiary work in Yew and Box.

Mr. E. J. Hicks made a display of autumn-flowering Roses of outstanding quality, the blooms, in spite of the wet weather, being very clean and of good colour. The varieties included Johanna Bridge, apricot; Betty Uprichard, a most attractive flower of deep carmine and copper shade; Ophelia and its sport Golden Ophelia; Mrs. Herbert Stevens, white; Golden Emblem, yellow; W. F. Dreer, yellow, flushed with old rose and apricot; Clovelly and Columbia, two good pink varieties; and Hoosier Beauty, the blooms of which showed no suspicion of "blueness" (Silver-Gilt Banksian Medal).

The Rev. J. H. Pemberton staged a neat display of Roses and the hybrid-perpetual Musk varieties were represented by Penelope, pink; Cornelia, deep pink; Vanity, a single rose-pink flower; Pax, white, and Prosperity, white, faintly flushed with pink (Bronze Banksian Medal).

Mr. Geo. Prince also showed Roses in excellent condition and displayed the blooms in baskets and epergnes. His best flowers were of Madame Butterfly, Golden Emblem, Los Angeles, Covent Garden, and George Dickson (Silver Banksian Medal).

Messrs. S. Bide and Son showed the new climbing Polyantha Rose Phyllis Bide, with pink and apricot flowers, and, in addition to the many distinctions it has received this year, it was granted an Award of Merit on this occasion from the Floral Committee.

Perpetual-flowering Carnations were shown by Messrs. Stuart Low and Co. (Silver Banksian Medal); Messrs. Allwood Bros. (Bronze Banksian Medal), and Mr. C. Engelmann (Bronze Banksian Medal). Messrs. R. and G. Cuthbert showed their giant strain of Streptocarpus in distinct colours (Bronze Banksian Medal).

Hybrid Nerines were shown in excellent condition by Messrs. Barr and Sons, and two of the best were Aurora and Hera, obtained by crossing N. Bowdenii and a hybrid of N. Fothergillii. Both have very large flowers, Aurora being clear rose-pink with a light lavender stripe and Hera of a brighter shade of pink almost carmine-pink—with a deep rose stripe down the centre. Other prominent varieties were Queen Mary, rich salmon; Miss Shelley, salmon-pink; and Mrs. Douglas, pink, together with a number of unnamed seedlings of distinct colour (Silver Banksian Medal).

Messrs. B. Ladhams, Ltd., made a feature of hybrid Lobelias in many shades of colour and illustrating in a marked degree the wonderful free-flowering habit of the several forms as well as the utility of the plants for providing late autumn effects in the garden. Other choice subjects in this group were Coreopsis auriculata superba, Cimicifuga simplex, Trollius Ledebouri Golden Queen, which received an Award of Merit earlier in the year and is producing a second crop of blooms; and many choice Polygoniums, including the deep carmine-red P. atrosanguineum; P. campanulatum and its near ally P. cymosum, both with feathery panicles of white flowers, the round-headed P. Bistorta superba and the ornamental-leaved P. capitatum (Silver-Gilt Banksian Medal).

Mr. W. Wells showed Michaelmas Daisies in variety, the feathery Polygonum amplexicaule, Lupins, Artemisia lactiflora and Helenium rubrum (Bronze Banksian Medal).

Close by Messrs. Isaac House and Son displayed their numerous varieties of Scabiosa caucasica in white and distinct shades of blue, the centre of the group being occupied with tall spikes of Kniphofia Star of Baden mixed with plumes of Pampas Grass (Bronze Banksian Medal).

The white decorative Dahlia Polar Bear was admirably shown by Messrs. Wm. Cutbush and Son. It is a mammoth bloom of pure colour and good form. Michaelmas Daisies were also included in this group.

Messrs. Bakers, Ltd., brought a miscellaneous display of hardy flowers, Heleniums, Phloxes, Michaelmas Daisies, Achillea Cerise Queen, Polygonum campanulatum and Kniphofia Royal Standard, with coral-red and yellow flowers (Bronze Banksian Medal).

Mr. G. Reuthe displayed Nerines in variety as well as a choice collection of trees and shrubs and hardy flowers. (Silver Banksian Medal), and The Chalk Hills Nurseries also contributed a selection of hardy border flowers.

The Maytham Gardens employed the scarlet flowers of Lobelia cardinalis Huntsman, Dahlia Coltness Gem and Verbena chamaedrifolia with good effect. Violets were shown by Mr. J. J. Kettle (Silver Banksian Medal) and Mr. B. Pinney (Bronze Banksian Medal).

Mr. F. G. Wood showed a neat collection of hardy flowers, and Messrs. Rich and Co. displayed Michaelmas Daisies in variety.

A large number of spikes of Nerine Bowdenii, cut from the open, were shown by the Duchess of Wellington (gr. Mr. H. Beckingham), Ewhurst Park, Basingstoke. The flowers were of large size, and bulbs have been established in a south border at the foot of a large Yew hedge for a number of years (Bronze Banksian Medal).

There were a few groups of Dahlias, one of the largest exhibits being shown by Mr. J. B. Riding, who had a good display in spite of the lateness of the season. Some of the best blooms were Mrs. Carol Salbach (Decorative) large rose-pink flowers; Noble (Decorative), scarlet-orange; Snowdrift, a small-flowered white Cactus variety; Millionaire (Decorative), pink with white centre; Romney (Decorative), maroon; Edgar Jackson (Cactus), coral-red, and Joan (Decorative), a medium-sized bloom, with the buff-coloured florets tipped with white (Bronze Banksian Medal).

Messrs. J. Cheal and Sons, Ltd., showed hardy trees and shrubs in fruit, and the collection was rich in Berberis and Cotoneaster, Clerodendron foetidum, with purple flowers; Polygonum Aubertii and Ceanothus azureus Gloire de Versailles were also included in the group (Bronze Banksian Medal). The same firm also showed a large group of Dahlias, Nora Bell (Paeony), Edgar Jackson (Cactus), Gatton Star (Star) and Colleen (Collerette) being a few of the best (Silver Banksian Medal). Mr. J. T. West also showed Dahlias in good form, some of the best flowers being the scarlet Dazzle (miniature Paeony); Primrose, a fine yellow Decorative; Arthur Twitchett, a white Cactus of medium size, and Rookwood, a large-flowered Decorative sort with rose-lilac blooms (Bronze Banksian Medal).

Mr. Keith Luxford staged an excellent group of choice Chrysanthemums just inside the Hall. The background of the exhibit was occupied with tall epergnes filled with sprays of hardy border varieties, while the foreground was devoted to high quality disbudded blooms of the single Japanese and decorative types. Outstanding varieties amongst the singles were R. Blyth, of bright crimson-red colour; Godfrey's Gem, golden apricot; and Mrs. Loo Thomson, Primrose yellow. Two very fine Japanese varieties were Mr. T. Slack, a mammoth flower of reflexed form, the florets being of a warm Indian-red with buff reverse; and Sulphur Queen, a perfect incurved bloom of a pleasing shade of yellow. A very pretty grouping was made with the pure white decorative variety Hermione, and the dwarf-flowered single Stella, with prettily quilled florets, and Jean Pattison was also very striking in an epergne, the colour being of a rich coppery-orange shade (Silver-Gilt Banksian Medal.)

Mr. W. YANDELL contributed a good display of early-flowering border Chrysanthemums and included the new Salmon Profusion, Mrs. A. W. Thorpe, buff-terra-cotta; Dolores, bronze terra-cotta; Almirante, bright chestnut-crimson; Red Almirante, Framfield Yellow, and Armorel, coppery bronze. There were also a number of Pompon varieties displayed, chief of which were Blushing Bride, lilac blush; Crimson Precocite, crimson; and Piercy's Seedling, orange yellow. (Bronze Banksian Medal.)

Chrysanthemums of the Decorative type and of their own raising were shown by Messrs. CRAGG, HARRISON and CRAGG. Aldyth, rich crimson; The Wizard, deep bronze; Felicia, pink; and Jean Pattison, coppery-bronze, were a few of the newer varieties on view. (Bronze Banksian Medal.)

Messrs. GODFREY AND SON showed a number of new single varieties of Chrysanthemums, including Raleigh, rich crimson-maroon, with a yellow blotch at the base of the florets; Devonshire Cream, light yellow; Exmouth Pink, rich pink, and Godfrey's Gem, a pleasing shade of golden Apricot. (Bronze Banksian Medal.)

Fruit and Vegetable Committee.

Present: Messrs. C. G. A. Nix (Chairman), Jos. Cheal, G. F. Tinley, W. F. Giles, S. B. Dicks, A. Bullock, H. Prince, E. Neal, T. Pateman, E. Beckett, W. H. Divers, E. Bunyard and A. N. Rawes.

The new fruits shown for award included the fine autumn-fruiting Raspberry Heytor, raised by Mr. George Pine. It was exhibited both by Mr. PATEMAN, of Brocket Hall Gardens, Hatfield, and Messrs. ISAAC HOUSE AND SON, Westbury-on-Trym; in the opinion of some of the Committee this variety is superior even to Lloyd George. It was interesting to notice that the berries on Messrs. HOUSE's branches did not part nearly so readily from the placentas as those shown by Mr. PATEMAN. The variety is included in the trial of commercial fruits at Wisley, and the question of an award was deferred until it has been inspected there.

Mr. C. S. GOSS, Ham Green, Aylesbury, again showed Ham Green Favourite Apple, which was reported on very favourably by Mr. Divers last season following a request from the Committee to inspect the tree. The fruits were past their best.

Mr. C. J. DICKER, Holwell Bury Fruit Farm, Hitchin, showed a very highly coloured form of Apple Newton Wonder. The crimson colour is very intense and it was considered that the coloured form might be in demand in the north and other parts where highly coloured fruits are in request.

A coloured Potato of the Mr. Bresse type was shown by Mr. T. BAINES, The Gardens, Langham Oaks, Colchester. It was considered that this variety, if immune, would prove valuable for exhibition purposes, and it was decided to recommend the grower to send tubers to Ormskirk for trial as to cropping and immunity to Wart disease.

COLLECTIONS.

A Gold Medal was awarded to Mr. J. C. ALLGROVE, Middle Green, Slough, for an exhibit of Apples, Pears, Plums, Peaches, Nectarines, Medlars, and Quinces. The quality of the Apples, Pears, and Plums was superb, indeed it is rare to find such high quality in fruits other than in keenly contested competitive classes. The exhibit was very prettily decorated with bunches of Berberis vulgaris hanging from tall stands, and hips of Roses and fruits of Crataegus orientalis. A conspicuous place was afforded the variety Emperor Alexander, there being several dozen magnificent fruits of this sort. The new S. T. Wright was also well shown, and other Apples that were conspicuous for size and quality were Ontario, Annie Elizabeth, Bramley's Seedling, Peasgood's Nonesuch, Gascoyne's Scarlet, Lane's Prince Albert, Belle de Boskoop, Adams's Pearmain, Rival, and Bismarck. Of the Pears there were exceptionally good dishes of Beurré Clairgeau, Doyenné du Comice, St. Luke, Marie Louise, and Conference.

Messrs. G. BUNYARD AND CO., LTD., Maidstone, showed fifty-four sorts of Apples and eight of Pears, for which a Silver-gilt Hogg Medal was awarded. The fruits were arranged very attractively in dark-coloured baskets and staged on a ground of light matting. The varieties of Apples included Gascoyne's Seedling, Allington Pippin, Ellison's Orange, Ribston Pippin, Cox's Orange Pippin, Hormead Pearmain, Golden Noble, Roundway Magnum Bonum, Egremont Russet, Christmas Pearmain, Claygate Pearmain, Emperor Alexander and Hambling's Seedling, while the Pears comprised Conference, Verulam, Bergamotte d'Esperen, Pitmaston Duchess and Beurré Diel.

Messrs. SUTTON AND SONS showed a collection of vegetables which was one of the largest exhibits in the show. Apart from its size, it was an exhibit of superb quality and embraced some 196 kinds of vegetables displayed in the best exhibition style. To enumerate the whole of them would mean a list of practically everything the kitchen garden affords, but we may instance as being superlatively good, Pine-apple Beets; Carrots: Scarlet Intermediate, Veitch's Matchless, New Red Intermediate and Long Red Surrey; Improved Hollow Crown and Student Parsnips; King George Cucumbers; Celery Sulham Prize, Giant Red, Giant White and Solid White; Leek Musselburgh; Onions: Cranston's Excelsior and Ailsa Craig; Latest of All Peas; Exhibition Brussels Sprouts, and Kohl Rabi. This fine exhibit was awarded a Gold Medal with congratulations from the Council.

THE CHALK HILL NURSERIES, Alexandra Road, Reading, showed a collection of Apples and Pears. The Apples were finely coloured; The Houblon, Chas. Ross, Allington Pippin and Cox's Orange Pippin were very good.

Obituary.

William Charles Blaxill.—We regret to announce the death of Mr. William Charles Blaxill, for over fifty years in the service of Messrs. Sutton and Sons, and for the past eleven years head of the firm's exhibition department. He passed peacefully away at his residence, Tilehurst Road, Reading, on the 17th inst., aged 67. Mr. Blaxill joined the staff of the Reading seed establishment in January, 1874. For the first few years he was in the invoice and ledger offices, but it was always manifest that his interests were keen in the direction of the outside work of the business, and some few years ago he was appointed head of the exhibition department, where his skill and taste in the effective arrangements of the many outstanding exhibits he staged for the Reading firm are well-known to visitors to horticultural shows up and down the country. Mr. Blaxill was a keen rosarian, and for very many years had a good collection of the leading varieties of Roses. He cultivated nearly a thousand Rose trees, and although in later years his frequent absences from Reading compelled him to cease Rose-growing on a large scale, he remained an enthusiastic and able judge of a Rose to the end. Mr. Blaxill's horticultural activities were not, however, restricted to Roses—as a fruit and vegetable judge he was in constant demand. As a representative of Messrs. Sutton and Sons he visited practically all the leading gardens in the country, and probably no one in the seed trade was better known or more respected. He was one of nature's gentlemen; his pleasant, dignified manner endeared him to all with whom he had dealings, and horticulture is distinctly the poorer by his death.

John Bodger.—The American horticultural papers announce the death of Mr. John Bodger, head of the firm of Messrs. John Bodger and Sons Co., Los Angeles, California. Like many other successful American florists, Mr. Bodger was an Englishman and a native of Kingston, near Taunton. He settled in California after being twenty years in business as a nurseryman at Burnham, and established a new business at Santa Paula. Later he acquired 353 acres near Los Angeles. Here he engaged in seed-growing on a large scale specialising in Sweet Peas, Zinnias, Asters, and other flowers as well as vegetables. He was the introducer of the Giant Dahlia-flowered Zinnia, which he discovered as a chance seedling in 1915.

ANSWERS TO CORRESPONDENTS.

CELERY: *S. A.* The specimen of the Celery sent for examination gives every appearance of the roots having been eaten by some insect pest. It is impossible to advise you as to control measures unless you forward specimens of the grub, which no doubt you will find near the base of affected plants.

CHRYSANTHEMUMS "DAMPING-OFF": *F. W. E. K.* The "damping-off" at the tips of the flower growths is due to the presence of a parasitic fungus (Oidium Chrysanthemi), and its spread has no doubt been caused by the abnormally wet weather. It would be advisable to remove all affected growths and dust the plants with flowers of sulphur directly they are housed. The plants should be given plenty of room in order to permit of an efficient circulation of air.

CORRECTION.—In our appreciation of Mr. Ben Ashton on p. 260, column three, line twenty-one should read "the gardener resigned," instead of "the gardener died."

GLASSINESS IN APPLES: *P. S.* The Apples are affected with the physiological trouble known as "glassiness" and is caused by the cells of the flesh near the skin becoming overcharged with water. There is no known cure for the trouble, and it rarely happens that many fruits on a tree are so affected.

LEAF SPOT ON CELERY: *J. S. C. and J. Y.* It is now too late in the season to attempt to control this disease satisfactorily. Before sowing the seeds in the spring it is a good plan to soak them for half-an-hour in hydrogen-peroxide; this treatment will destroy the resting spore of the fungus which may be attached to the seed-coat. When the young plants have become established out-of-doors they should be sprayed at monthly intervals with Bordeaux mixture or Burgundy mixture.

R.H.S. EXAMINATIONS: *C. R. C.* Full particulars regarding the Royal Horticultural Society's examinations may be obtained on application to the Secretary of the Society, Vincent Square, Westminster, S.W. A stamped envelope addressed to yourself should accompany the application.

THUYA GIGANTEA: *D. D.* Thuya gigantea and T. Lobbii are synonymous with T. plicata. Other synonyms of this species are T. Craigiana and T. Menziesii. Libro-cedrus decurrens is often confused with T. gigantea, but can be recognised by the less pungent odour of the bruised leaves and by the larger cylindrical cones. It is also of a more stiff, columnar habit.

Communications Received.—C. M.—A. R—F. J. G.—P. G.—M. D.—D. C. W.—Old Subscriber.—G. H.—S. T. M.—W. A. X—W. R. B.—Myosotis.—A. J. B.

THE
Gardeners' Chronicle

No. 1975—*SATURDAY, NOVEMBER* 1, 1924.

CONTENTS.

Afforestation, the possibilities of 293
Agricultural wages board 294
Alpine Garden—
  Aubrietia tauricola alba 297
  Gunnera magellanica 297
  Rockery plants for late summer and autumn planting ... 297
Amorphophallus Titanum 302
Annuals for greenhouse and conservatory decoration 299
Apple canker 294
Apple crop, the U.S. ... 294
Apple-growing in Great Britain 293
Books, notices of—
  Dwarf and Slow-growing Conifers ... 301
Concrete in the garden 306
Draps, M. Emile ... 294
Elaeocarpus Ganitrus... 306
Fruit crops, remarks on the condition of the 305
Fruit trees, the propagation of 293
"Gardeners' Chronicle" seventy-five years ago 295
Hardy flower border—
  Calendula officinalis 298
  Gaura Lindheimeri 298
  Herbaceous Paeonies 298
Hop crop, the 294
Indoor Plants—
  Luculia gratissima ... 295
  Thunbergia laurifolia 295
Parks and gardens, public 299
Phosphates from Morocco 294
Plants new or noteworthy—
  Evodia quercifolia ... 303
Rhododendrons... ... 304
Societies—
  Ayrshire Agricultural 309
  British Florists' Federation 310
  Imperial Fruit Show 308
  Manchester and North of England Orchid 307
  National Sweet Pea 308
  Reading Gardeners'... 310
  Royal Caledonian Horticultural ... 306
  Royal Horticultural 306
  Royal Scottish Arboricultural... ... 307
  Société Pomologique de France 307
Trees and Shrubs—
  Evergreen hedges ... 305
  Lonicera nitida ... 305
  Olearia Forsteri ... 305
  Vitis Thunbergii ... 305
Vinery, the 306
Ward's, Mr. F. Kingdon, eighth expedition in Asia 300
Week's Work. the ... 296
Welsh garden, notes from a 298

ILLUSTRATIONS.

Amorphophallus Titanum 301, 302, 303 304
Campanula Portenschlagiana... 297
Draps, M. Emile, portrait of... 294
Forest of Picea, Willow and Birch, with Taliense Rhododendron in China 300 301
Laelio-Cattleya Queen Mary, Westonbirt variety ... 295

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 45·0.

ACTUAL TEMPERATURE:—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 29, 10 a.m.: Bar. 29·0: temp. 60°. Weather, bright.

The Propagation of Fruit Trees.

THOSE of us who are gardeners are so familiarised by routine to conventional practice, and it may be added so preoccupied in carrying it out that we are apt to be incurious as to the reasons why this or that practice is universally adopted by cultivators. For example, we either bud or graft our fruit trees or purchase worked stocks, and only those among us of more than average curiosity or leisure ask why we do these things instead of raising our top fruit as we do our soft fruit by vegetative methods of propagation. Those who, impatient and impetuous, think that knowledge has only recently been vouchsafed to mankind—mainly through their mouth-piece—would tell us that our practice is a mere obedience to tradition, and here they are quite right—and that if we were more alert and enterprising and progressive we should soon discover quicker and less tortuous methods — and herein they are probably wrong. For the ultra-modern idea that traditions are worn out because they are old is false; the older a tradition, the greater the probability of its truth. Wherefore in the case in point, that of the propagation of top fruit trees, it is probable that the old gardeners who invented and practised the methods of grafting and budding did not do so to beguile idle hours, but because they found that these were the best ways of getting fruit-bearing trees. The systematic investigation of the problems of propagation* in relation with fruit trees which is being carried on at the East Malling Research Station by Mr. Hatton and his colleagues, although not yet complete, appears to justify this conclusion and to show why simpler, more direct methods of increasing fruit trees are but rarely practised. The reasons seem to be two-fold. In the first place, most varieties of Apples are not propagated readily by ordinary methods. Stooling, that is, cutting down the plant to the ground, earthing up the subsequent sucker-like growths and removing them when they have rooted, although very successful with Apple stocks is generally a failure with the cultivated varieties. Casting about for more successful methods, the workers at East Malling tried layering. The strongest branches were laid on the soil, weaker growths cut off, and the prostrate plant earthed over. But although this method was successful to a certain extent, success was very limited, for whereas layering applied to Apple stocks produced eighty per cent., when applied to cultivated varieties, this method only yielded twenty per cent. of rooted shoots. Of eight varieties tried only a few, Oslin and perhaps Lord Derby, responded generously to propagation by layering. It is noteworthy, however, that Northern Spy, an Apple worth trying as a stock because of its immunity from Woolly Aphis, gave seventy-five per cent. of rooted shoots from the layer beds. Hard-wood cuttings taken from the current season's growth proved even less successful, and root cuttings, although in some cases they struck fairly readily, have not so far produced robust plants. Needless to say, with Plums the case is somewhat different. In different parts of the country certain varieties are commonly grown from suckers—that is, on their own roots. Magnum Bonum, Warwick Drooper, and Bastard Victoria are examples. Pershore Egg Plum and Blaisdon Red give rooted layers fairly readily, and Victoria and Czar may be propagated by these means. Yet the fact remains that the great majority of Plums are worked on Mussel, Myrobalan, Brompton or other stock. The behaviour of rooted layers of Apple and Plum seems to supply the reason for a justification of current practice. The own-root plant reaches the maiden stage as quickly as the grafted plant, say in two years from the nursery bed, but its growth—at least in the early years—is much less vigorous than is that of a worked tree, even though the latter be budded on a semi-dwarfing stock. Both in height and weight the tree on its own roots lags behind the budded or grafted plant. The tables and illustration published in the *Report* demonstrate these facts in a striking manner, and although they apply only to the early years there is no reason to suppose that the "lag" will be made up later on. What is true of Apples is true also of Plums, and therefore, unless and until new facts are discovered to make us alter our practice, we shall do well to adhere to the methods of our forefathers and plant worked trees in our orchards.

Apple Growing in Great Britain.—According to the Ministry of Agriculture there are approximately fourteen million Apple trees in bearing in commercial orchards of an acre or more in England and Wales. Of these fourteen million more than a quarter are dessert Apples, one half are cooking Apples, and the remainder are Cider Apples.

Royal Horticultural Society's Examinations.—The dates for the examinations in Horticulture conducted by the Royal Horticultural Society in 1925 will be as follow:—Written examinations: General examinations (Seniors and Juniors), Wednesday, March 25; School teachers' examination (Preliminary and Honours), Saturday, April 4; National Diploma, May 9. Practical examinations: Teachers' Honours, Friday, June 19, and possibly also Thursday, June 18; National Diploma, Preliminary, June 23 and 24; Final, June 25 and 26. The attention of candidates is drawn to the fact that entries for the Diploma examination must be received before January 1, 1925. Copies of the syllabus and entry form may be obtained by sending a stamped addressed envelope to the Secretary, Royal Horticultural Society, Vincent Square, S.W. 1.

Horticultural Exhibition in Rumania.—During November, between the 2nd and the 8th, a horticultural exhibition will be held in Bucharest, which has received the patronage of the King and Queen of Roumania. It will be held in a pavilion in the Caroly Park.

Paris Autumn Exhibition.—On account of the occupation of the exhibition building at Cours-la-Reine by an exhibition of Decorative Arts, the Paris autumn show is being held in the Palais de Bois, Port Maillot, at the corner of the Boulevard Lannes, in Paris. It opened on October 24, continues to November 2, and consists chiefly, as usual, of Chrysanthemums and other flowers and fruit in season.

Kingston and Surbiton Chrysanthemum Society.—The annual exhibition of this old Society is fixed for November 12 next. Many Silver Cups and other valuable prizes are offered, and a keen competition is anticipated. Mr. W. H. Divers, Westdean. Hook, near Surbiton, is the Hon. Secretary,

Potatos and Potato Diseases.—At the fortnightly meeting of the Royal Horticultural Society, to be held at Westminster on November 4, Mr. D. Cuthbertson will deliver a lecture on "The Relation of Leaf and other Diseases in Potatos to the Crop." We understand that the lecture will be freely illustrated.

The Possibilites of Afforestation.—This was the title of a very able and fascinating address delivered by Mr. Donald Munro, O.B.E., Banchory, near Aberdeen, an outstanding figure in forestry and timber circles in the north of Scotland, before the Aberdeen Rotary Club. Mr. Munro's fine, sonorous voice and the distinctness with which he was heard added greatly to the pleasure of the listeners. Provost Munro—he presides over the municipal affairs of the thriving and beautiful burgh of Banchory—said that, with the possible exception of agriculture, he knew of no industry in Scotland so full of possibilities as that of afforestation. As one who knew the great extent to which labour was represented in the price of timber at all stages of its production, he was amazed at the extraordinary indifference with which the question of the growing and utilisation of our own wood continues to be regarded. The lessons of the war had had little effect. They were told that a three year's supply of timber, available within their own shores, was essential to tide us over another similar national emergency. A three-year's supply of wood, however, was not going to prevent them, at the end of that period, sending £10,000,000 sterling annually out of the country, as they were doing in Scotland before 1914. What was wanted was a supply of timber in perpetuity, which would keep the country supplied in peace as well as in war. Unfortunately this could not be done in an ordinary course in the lifetime of business men to-day, and it was therefore essentially a matter for the nation, and consequently for the Government, local authorities, and other bodies of a continuous character. In the report of the Forestry Commission for 1923, the cost of planting in Scotland was given as £6 17s. 5d. per acre. Except for seeds, tools and wire, the whole of the expenditure was in wages. It was the same with regard to the selling price of wood. Except for transport, which was a serious matter in the timber trade, the great bulk of the price of timber generally was represented by wages. Did this not point to the production of timber as one of the best remedies for the relief of unemployment? The German forests in pre-war times, directly and indirectly, created employment to the value of £20,000,000 to wood workers. In Bavaria, 75,000 people were engaged in the woods, and one half of them were smallholders. In Les Landes, in France, less in size than Inverness-shire, 30,000 people were employed in the woods, 800 sawmills were working, and the whole area was planted up within the last century by the direction of the French Government. A population of one individual to every thirty-four acres had increased to one on every eight acres, and the French would assure them that it was the result of the State forest policy. There was danger in delay. Large areas of Scotland were denuded of crops of trees during the war, and it was the experience in every other country where trees were grown that unless the crops were renewed within a definite period the land deteriorated, and in many instances the soil, especially on steep hillsides, had actually disappeared, leaving bare rock, and otherwise unplantable land. Besides the case, box, and barrel-making industries in Aberdeen, there were a thousand and one other uses for their timber. In Scotland some 47,000,000 tons of coal were produced annually, and the coal could not be raised without wood, the proportion being eight lineal feet of timber for every ton of coal raised. During several years of the war, when it was impossible to import timber, the Scottish woods and forests were diminished at the rate of a million tons of wood per annum for the mines alone. For paper making about 250,000,000 trees must be used every year. In Aberdeen this year already about £100,000 had been paid for pulpwood for box-making, and all of that could have come from Scottish forests if they had been there. Mr. Munro concluded with an appeal for the endowment of a Chair of Forestry in Aberdeen, contending that two completely equipped University Chairs in Scotland for forestry teaching would not be excessive. Warm tributes were paid the speaker at the close of his address for the lucid way in which he had directed attention once more to a problem of great national importance.

---

* *Annual Report*, East Malling Research Station, 1923. Price, to non-subscribers, 3s. 4d. post free.

The United States Apple Crop.—The total production of Apples in U.S.A. for 1924 is estimated at 178 million bushels compared with 196 million bushels last year. The decline in the commercial crop is even greater, the figures being twenty-eight million bushels and thirty-four million bushels respectively. The quality of the fruits in the Eastern States is below the average, owing to spraying operations being hindered by wet weather.

Flora of Gorgona Island.—Gorgona Island, off the coast of Columbia, has an interesting flora. The last time it was visited by a botanical expedition—nearly one hundred years ago, eighteen species new to science were discovered. Members of a recent scientific expedition have discovered over two hundred specimens of plants, representing between sixty and eighty species, and it is anticipated that they include a number new to science. This island, which is practically unexplored, forms part of a large region along the coast of Columbia, which has a remarkably high percentage of endemic plants. The flora includes members of the Melastomaceae, Piperaceae, Rubiaceae and other families common to the tropical rain forest.

M. Emile Draps.—Born at Brussels in 1881, M. Emile Draps does not appear to have been handicapped in any way by the fact that his birthday was on April 1. The son of M. Louis Draps Dom, a most successful cultivator of Codiaeums, Dracaenas, Palms, Orchids and Cyclamens at Laeken, M. Emile Draps adopted his father's profession and soon proved to be a clever cultivator. Desiring to start business on his own account he decided to specialise in Carnations, and in 1909 he started a nursery at West Dunkirk, on the Belgian coast. Here his skill as a cultivator and his genius as an organiser achieved success, but alas, the war came and ere long his twenty-five glass-houses were utterly destroyed. After the war, however, M. E. Draps began all over again and in 1891 he established a nursery at Merxem, a suburb of Antwerp, where he has a charming house, a beautiful home, and an extensive, up-to-date nursery establishment. Some of his houses were erected by an English firm, but the others he has built himself. Altogether he has two acres of glass and grows about 200,000 Carnation plants for the production of cut blooms; he has plans for another huge house which he hopes to build next year. The heating of the establishment is by hot water, but the boilers themselves are heated by oil fuel, which M. Draps considers to be an altogether cleaner and more economical method than the use of coal or coke. We have seen M. Draps' system of heating, and it appears to be all he claims for it. It is certainly a great labour-saving method, and the large space previously needed for the storage of coal or coke is now used more profitably. M. Draps is a great admirer of our leading Carnation growers and a frequent visitor to England. During the present year he was Organising President of the successful International Horticultural Exhibition held at Antwerp in September, and, as pointed out in our issue of September 20 (page 205), he was the most successful exhibitor of Carnations on that occasion. M. Draps grows most of the Carnations which are so popular with market growers in this country, some of the French varieties, and also some seedlings of his own raising.

M. EMILE DRAPS.

The Hop Crop.—The Hop yield of 1924 is nearly double that of 1923 and the yield per acre is stated to be by far the heaviest on record, namely 17.2 cwts., the highest previously recorded yield being 14.2 cwts. per acre in 1905. Kent growers have averaged rather more than 19 cwts. per acre, or 66 per cent. above the mean of the ten years 1914-23, while Sussex growers had a crop averaging over 18 cwts. per acre, or 80 per cent. above the decennial yield. The total yield is not the largest known, for more Hops were produced in 1914 when, however, 10,000 more acres were cultivated.

Phosphates from Morocco.—The exports of phosphates from Morocco show a remarkable expansion during the past four years, rising from 8,000 tons in 1921, to 80,000 tons in 1922, 190,000 tons in 1923, and 272,000 tons for the first eight months of the present year. The port of exportation is Casablanca, and the chief customers are France and Spain. The industry promises to reach large proportions, as there are estimated to be in sight deposits containing a high percentage of phosphates: those exported show seventy-six per cent. The rail facilities inland and the quay accommodation at Casablanca have been developed to deal with a big volume of trade in the mineral.

Agricultural Wages Board.—The Minister of Agriculture and Fisheries has appointed the following persons to be the Appointed Members of the Agricultural Wages Board for England and Wales, which is being set up under the provisions of the Agricultural Wages (Regulation) Act, 1924:—The Right Hon. The Lord Kenyon, K.C.V.O. (Chairman); Mr. A. W. Ashby, Advisory Lecturer in agricultural economics at University College, Aberystwyth; Mr. C. S. Orwin, Director of the Institute for Research in Agricultural Economics, Oxford; Mr. J. Willmot, Past President of the Surveyors' Institution; and Mrs. M. Wintringham, M.P. The members of the Board representing employers will be nominated by the National Farmers' Union, and those representing farm-workers by the National Union of Agricultural Workers and the Agricultural Section of the Workers' Union. The Board will be formally constituted so soon as these nominations are received.

Apple Canker.—An illustrated leaflet* published by the Ministry of Agriculture gives some very useful information on Apple canker, caused by Nectria galligena (N. ditissima). Growers are well aware that canker is more prevalent in certain districts than in others and is always worse in gardens and orchards situated at a low elevation and on a clay sub-soil. The reason seems to be that damp conditions and heavy soil favour rank growth, which is not only more readily affected by the fungus, but the disease is enabled to develop more rapidly in the soft tissues. The need for drainage and encouragement of surface rooting by root pruning are referred to in the leaflet. A list of varieties susceptible to this common complaint of Apples is given, also a list of sorts that are not very susceptible, the latter including such excellent varieties as Annie Elizabeth, Beauty of Kent, Blenheim Pippin, Bismarck, Bramley's Seedling, Lane's Prince Albert, Mr. Gladstone, and Newton Wonder. With regard to controlling the disease, the cutting down and burning of old and diseased trees is recommended, and in the case of trees not very badly diseased, the cutting out of the cankered shoots and boughs. All cut surfaces should be covered by a protective substance, such as Stockholm tar, to prevent the fungus gaining an entrance. Canker is often present in association with Woolly Aphis, the punctures caused by the insect favouring infection by the canker fungus. Nurserymen are reminded that the sale of trees which are substantially attacked with this disease is prohibited by the Sale of Diseased Plants Order of 1922, under penalty of £10.

---

* Apple Canker. *Leaflet No.* 56. Ministry of Agriculture, 10, Whitehall Place, S.W.1.

Appointments for the Ensuing Week.—Sunday, November 2: Wakefield and Northern Tulip Society's meeting. Tuesday, November 4: Royal Horticultural Society's Committees meet; West of England Chrysanthemum Society's show at Plymouth Guildhall (3 days); Birmingham Chrysanthemum Society's show (3 days); Eastbourne Horticultural Society's show (2 days); Royal Caledonian Horticultural Society's meeting; Croydon and District Horticultural Society's meeting. Wednesday, November 5; St. Neots Chrysanthemum Society's show; Bath Gardeners' Society's Chrysanthemum show (2 days); Winchester Horticultural Society's show (2 days); Glasgow and West of Scotland Horticultural Society's meeting; Wimbledon Gardeners' Mutual Improvement Society's meeting. Thursday, November 6: National Chrysanthemum Society's show (2 days); United Horticultural Benefit and Provident Society's dinner at Imperial Hotel, Russell Square, W.C.; Derbyshire Horticultural Association's show (3 days); Bedford Chrysanthemum Society's show; Jersey Gardeners' Society's show; Nottingham and Notts. Chrysanthemum Society's meeting Saturday, Nov. 8: Accrington and District Chrysanthemum Society's show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Museum of Economic Botany.*—Rumour says that the botanical authorities at the British Museum are awakening from their gentle slumbers, and that one of the officers has proceeded to Paris to ask questions concerning the manner in which vegetable substances and examples of vegetable structure are exposed to the gaze of the *profanum vulgus* in the gallery of Natural History in that city. We can imagine the amazement of the French naturalists at learning the errand of this gentleman. They will hardly believe in the possibility of anything popular proceeding from the unknown depths at which our national wealth in botany is believed to be lodged—if we have any. We must ourselves confess to similar incredulity. Those who have resisted progress as long as resistance was possible, whose whole lives have been spent in an attempt to appropriate to their personal advantage what should have been devoted to public science, are not the kind of people to be suddenly attacked by a fit of consciousness that there are public interests as well as a public purse. We have no faith in them. But why should advice in the formation of a public botanic museum be sought in Paris? Ample information might be obtained for a shilling ride to the Royal Botanic Garden at Kew, where we have already a collection of objects of the highest interest to the man of science, of business, or of intelligent curiosity, admirably arranged, and with no other defects in the manner of showing them than belong to the construction of a building originally destined to the humble office of a fruit room The principal on which the botanical museum at Kew is arranged is capable of much extension, but of no essential improvement. A journey to Paris was superfluous. And why have a botanical museum at all in dirty, smoky London? Why even an herbarium? The foulest atmosphere known in any European metropolis is in the highest degree unfavourable to the preservation of objects of natural history, and especially of articles so perishable as those supplied by the vegetable kingdom. We believe it impossible to keep them in a state fit for public exhibition. The attempt will entail endless renewal and ceaseless expense. To have a public value the objects must be kept in perfect order, perfectly neat and clean, perfectly uninjured, and there must be light enough to see them by at all times. Can these conditions be secured in London? The question will be answered by everybody who has lived in London for a month. *Gard. Chron., November 3, 1849.*

Publication Received.—*The Practical Book of Outdoor Flowers.* By J. B. Lippincott and Co., 16, John Street, Adelphi, W.C. Price 35s. net.

INDOOR PLANTS.

THUNBERGIA LAURIFOLIA.

THIS splendid winter-flowering climber is a native of India, and though introduced more than half-a-century ago, is seldom seen outside of botanical gardens. Its large, lavender, white-throated flowers are freely produced in clustered racemes, on short lateral growths, or at the ends of the main stems. The racemes contain from forty to fifty flower buds, and as only seven or eight of these open at the same time, the season of flowering often lasts for three months.

Where a house is devoted to winter-flowering Begonias, a beautiful effect is obtained by training specimens of this climber thinly over the roof, the same conditions suiting each plant equally well. The plants may either be grown permanently in a small border or—as it flowers in a small state—in pots elsewhere and introduced to the house at the same time as the Begonias. Short-jointed, half-ripened shoots root readily in summer, under a bell glass or in a frame on a hotbed providing a temperature of seventy degrees Afford the plants larger pots as becomes necessary, and stage the plants close to the roof glass in a house having a temperature of not less than 50° in in winter. Just before growth commences in spring the plants should be pruned, leaving only three or four joints above the soil.

As soon as the buds appear to push, transfer the plants to five-inch or six-inch pots, using a compost consisting of three parts of turfy loam, one part of decayed manure, and sufficient sharp sand to render the mixture porous. A little peat may be used if the loam lacks fibre.

Place the plants in a temperature of 60° and by May or June they will require another shift, this time into nine-inch pots, in which they will flower.

Strings on which to train the shoots should be placed about nine inches from the roof Regular syringings during summer are of great assistance in keeping the plants clean, and, as the roots permeate the soil, an occasional sprinkling of Clay's fertilizer will be beneficial to their growth. *J. Comber, Nymans Gardens, Handcross.*

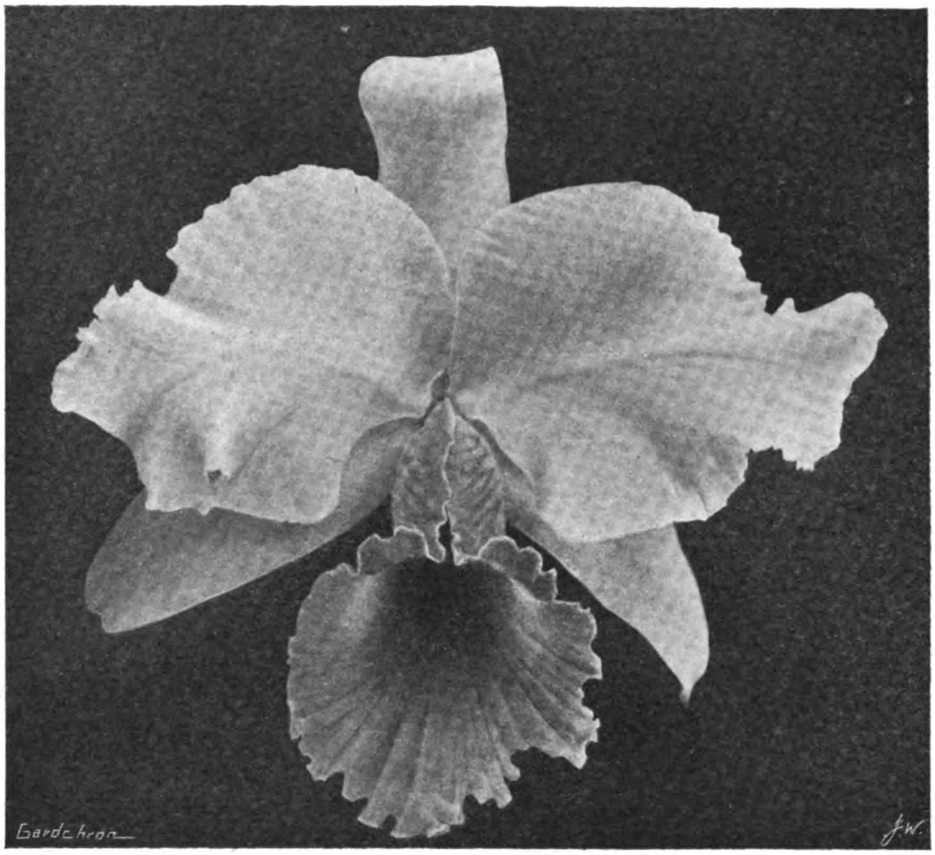


FIG. 104.—LAELIO-CATTLEYA QUEEN MARY, WESTONBIRT VAR.

R.H.S. First Class Certificate, October 21 (see p. 290.)

LUCULIA GRATISSIMA.

THIS is one of the most showy of greenhouse plants and certainly as fragrant as any, yet it is not often included in collections of greenhouse and conservatory plants. If allowed to grow unrestricted it makes a large bush from six to twelve feet high. The rose-coloured flowers, developed in large, terminal, cymose heads, together with the large, green, oval leaves, give the plant a striking appearance.

L. gratissima may be cultivated either as a pot plant or in a bed or border; the latter method is preferable, for with plenty of root room and planted in a compost of peat, good turfy loam and a small proportion of sand, the plant will grow vigorously, develop healthy leaves of a rich deep green, and flower profusely.

Under pot cultivation Luculia gratissima needs a great deal of care, and I have found it advisable never to allow this plant to remain in the same pot for too long, otherwise there would be a danger of it losing its leaves, in which case the flowers would be carried on bare stalks. Feeding does not seem to allay the tendency, but a shift, even though only into a slightly larger pot, will keep the Luculia healthy.

Cuttings inserted in sand or a sandy compost will strike fairly readily in a propagating case. Luculia Pinceana is a species with white flowers and narrower leaves, but it is not so effective or fragrant as L. gratissima. This Luculia flowers from May to September. *H. W. Stenning, Ebrington Hall Gardens, Campden, Gloucestershire.*

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Vanda.—The present is a suitable time for overhauling Vandas of the V. sauvis and V. tricolor section, as these plants produce roots freely at this period, and will continue to do so all through the winter. Plants that are well furnished with leaves should not be disturbed by repotting, unless larger receptacles are needed, but some of the old material may be removed from the surface and fresh compost substituted. Specimens that have lost some of their bottom foliage may be taken out of their receptacles, and, if there are sufficient live roots some distance up the stem, so much of the lower part of the latter may be cut away as will bring the lowest pair of leaves, when the plant is placed in the pot, down almost to the rim. In repotting, work some medium-sized crocks around and between the roots near to the top, finishing with a surface layer of clean picked Sphagnum Moss. Secure the stems to a neat stick after repotting or top dressing the plants. No water should be afforded for a few days, then water the soil thoroughly, after which, whenever the surface Moss appears dry, a light sprinkling of water by means of a Rose-can will suffice. The plants should be grown in an intermediate temperature. They should be sponged with a suitable insecticide in order to cleanse them from dust and small brown insects that attach themselves firmly to the stems and leaves; great care is needed in dislodging the pests or the leaves may be damaged.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Herbaceous Borders.—Borders which have been in existence for two or three years without being disturbed will need to be thoroughly overhauled and the work should now be undertaken. The plants should be lifted and laid-in on a spare piece of ground while the work of preparing the borders for replanting is carried out. This work should be done thoroughly, moving the soil to a depth of thirty inches if possible and enriching it with liberal dressings of partially decayed farmyard or vegetable manure; a sprinkling of coarse bone meal, worked into the surface soil before planting, is also an excellent and lasting fertiliser. When the border is ready for replanting the arrangement of the plants should be carefully considered with regard to their height, colour and habit of growth. The old plants should be broken up to provide material for replanting, selecting young and robust pieces of moderate size from the outer portion of each clump for this purpose. The division of large clumps is best effected by inserting two forks back to back in the centre of the plants and levering them apart. Plant carefully and firmly, varying the distance in accordance with the known vigour of the several subjects, taking care to give every variety ample space for its full development. When planting is completed level the surface neatly and, if possible, give it a top-dressing of decayed manure or leaf-soil.

Lily-of-the-Valley.—Plantations of this valuable plant which have become overcrowded may be transplanted at the present time. Lift the crowns, separate them and replant them at a distance of two or three inches apart, making the soil quite firm. As the beds should be left undisturbed for a number of years opportunity should be taken to enrich the soil with well-decayed manure; a surface mulch of the same material is very beneficial. Beds which are to be left undisturbed should also receive a top-dressing of manure.

General Remarks.—During the early part of the month the planting of all kinds of spring-flowering bulbs should be completed. Collect leaves from lawns and drives and stack them in some out-of-the-way place for future use. Oak and Beech leaves are the most valuable, and afford the most durable warmth, therefore, if needed for hot-beds, these should be kept separate and stacked as dry as practicable until wanted. Dry leaves also afford excellent protecting material for various purposes during frosty weather. Where alterations are contemplated they should be determined on without delay and the work proceeded with so that the ground may become settled before the spring. Occasional changes in the form of beds or shrubberies are necessary, and a retrospective glance with a view to future arrangements will be useful now, while the whole effect is fresh in the memory, and when next year's display is about to be provided for.

Vinca.—The Vincas are very accommodating plants and extremely useful for making a carpet under trees where such is required. The plants soon form a dense, green mass in such positions, presenting a neat appearance and preventing weeds from taking the lead and becoming a nuisance. As they flower in the early part of the year any necessary division and replanting should be done now.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Lily-of-the-Valley.—Imported natural crowns are usually obtainable during early November. These should be potted more firmly than the retarded roots, using a heavier loamy, though open compost, and well-drained pots. After potting the plants the pots should be plunged to their rims in ashes or fibre outside. These will not readily respond to forcing until well into the New Year (and then the forcing should be very gradual and mild) unless it should happen that the crowns have been exposed to sharp frost for one or two weeks. Nurserymen sometimes offer frozen crowns of Lily-of-the-Valley. The term is meant to apply to roots of the current year which have been placed in the refrigerator for a short time only. These take a longer time to bring into flower than do the retarded crowns, but the flowers generally are of better quality and will keep longer in a fresh condition.

Malmaison Carnations.—Young, rooted layers, which were potted into 60-sized pots, should, when sufficiently rooted, be transferred to receptacles of six inches diameter. The soil should consist mainly of good fibrous loam, with a little well-decayed old hot-bed or old Mushroom-bed manure, some old mortar rubble, sand and a little soot. The soil should be made firm at this potting, and the plants, after potting, should be placed in a cool house or pit. Having well watered the plants the house should be kept somewhat close for a few days, afterwards affording a free circulation of air to the plants, more or less, at all times.

Forcing Plants.—Plants required for forcing, including Spiraea japonica, S. astilboides, S. Queen Alexandra, and S. Peach Blossom; Dielytra spectabilis, Polygonatum multiflorum (Solomon's Seal), Azalea mollis, Prunus triloba, Deutzias, Forsythias, Staphylea colchica, Wistarias and Lilacs, if not already secured should be ordered forthwith.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Cucumbers.—To maintain a regular supply of Cucumbers at this season of the year and onwards great care must be exercised with regards to supplying moisture both at the roots or by means of overhead syringings. Plants coming into bearing should be given every encouragement to make stout, sturdy growth before the dull months of winter arrive. It is always unwise to overcrop the plants and they should be kept perfectly clean of pests. Maintain a steady temperature and an atmosphere in accordance with outside conditions. Top-dress the roots lightly about every ten days or so with a mixture of sweet loam, manure from a spent Mushroom-bed, flaky leaf-mould and wood ash. Mix the materials thoroughly and allow the compost to become warmed to the temperature of the house before using it. Cut all fruits as they become large enough for use in order to conserve the energies of the plants; the latter will not readily recover from a severe check caused by over-cropping at this season of the year. During times of severe frosts it will be wise to cover the house or pit with mats, rather than heat the water pipes excessively.

Strawberries in Pots.—Plants in pots that have been prepared for early forcing have made very fine crowns, notwithstanding the unfavourable weather during their growing season. The plants should now be placed in cold frames, where they can be protected from heavy rains and snow, but not subjected to warmth at present. The lights should be removed on all favourable occasions and only replaced when needed to protect the plants from rain and frost. The receptacles should be plunged in ashes or leaves up to the rims to prevent the pots becoming broken in frosty weather. Another method of storing is to arrange the pots in layers of leaves or ashes in a sheltered position, for preference near a building. The pots should be placed on their sides with the material mentioned and well packed between each layer; further protection should be given with strawy litter during severe frost, but the litter should be removed when the weather permits.

Tomatos.—Winter-fruiting Tomatos that have been grown in pots to keep up the supply should now be swelling up their first and second trusses of fruits and may receive frequent light top-dressings of sweet soil to help them to mature their crop. I much prefer this method of feeding to using stimulating manures at this season of the year, which, if given in excess, will cause the opening flowers to drop prematurely.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq. Carlton Park, Market Harborough, Leicestershire.

Apples.—The great number of varieties of this fruit makes the selection of sorts for planting a matter of difficulty. Locality should have consideration in determining the choice. In cold, exposed parts of the country those described as hardy, free bearers should be chosen, while in the warmer and more sheltered parts there may be a much wider choice. Taking ordinary sorts first, of the Codlins, such as Keswick Codlin, Lord Grosvenor, and Lord Suffield, the last is liable to canker on cold soils, but all are good and reliable croppers, and these may be followed with The Queen, Norfolk Beauty, Lord Derby, Peasgood's Nonesuch, King's Acre Bountiful, Ecklinville Seedling, Golden Noble, and Grenadier, to name only a few. To prolong the season, Beauty of Kent, Hambling's Seedling, Bramley's Seedling, Dumelow's Seedling (Wellington), Gascoyne's Scarlet, Mère de Ménage, Belle de Pontoise, Newton Wonder, and Edward VII, may be selected. The last variety blooms very late, thus often escaping damage to the crop by spring frosts. Choice dessert varieties include Irish Peach, Beauty of Bath, and Mr. Gladstone, followed by Coronation, St. Edmund's Russet, James Grieve, Scarlet Pearmain, Ellison's Orange, Charles Ross, Rival, Allington Pippin, Ribston Pippin, and William Crump. Late varieties should include Cox's Orange Pippin, The Houblon, Sturmer Pippin, Claygate Pearmain, King of Tompkins County (which requires a warm, sunny position), King's Acre Pippin, Easter Orange, Barnack Beauty, and Annie Elizabeth.

Forms of Fruit Trees.—The form of tree best suited for planting depends largely on the space available and the positions intended to be filled. Espaliers may be employed as boundaries in the kitchen garden or edgings to walks; horizontally trained cordons, and single or double cordons, should be used where space is limited, but where this is not a consideration then bushes or pyramids may be planted, always allowing plenty of room between each tree, say about ten feet apart. Horizontally trained trees should be placed from fifteen feet to twenty feet apart, and cordons about two feet. Tall standards in orchards should be planted about twenty-four feet apart, thus allowing room between them for the planting of Red or Black Currants and Gooseberries. For a small orchard, half-standards and open bushes planted alternately would be ideal, as the fruit is more easily gathered and not so liable to be blown down by strong winds as when standards are selected.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Spring Cabbage.—Plants set out in rows some time since are large enough to have soil drawn up to them to keep them firm in the ground and help them to withstand the cold of winter. It is not too late to make further plantings of Cabbage.

Seakale.—Roots of Seakale intended for forcing may be lifted for this purpose; select good, sound crowns, not too large. They may be placed in boxes or large pots and placed in the Mushroom-house. Water the roots after placing them in position.

Leeks.—The main crop of Leeks require attention. Trim off a goodly portion of the tops of the plants and by means of the draw-hoe place plenty of soil round the necks. Protect the crop from frost during the winter.

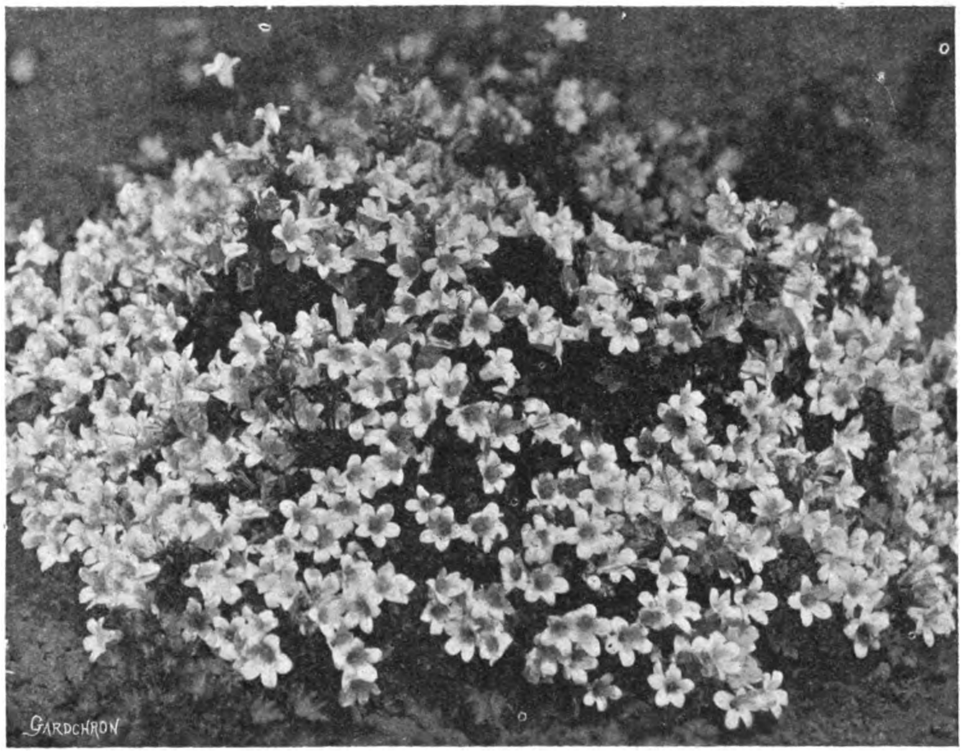
Salads.—Where there is a constant demand for salads it is necessary to use a number of cold frames to keep up late autumn, winter, and early spring supplies. Large plants growing in the garden may be lifted with good balls of soil and transferred to the frames. The latter should be protected in very cold weather with mats, but on all favourable occasions admit plenty of air to the frames. Mustard and Cress will now require to be sown in boxes in heat.

General Remarks.—The clearing away of spent crops should receive attention, as it is neither good for the ground to be carrying decaying vegetation, nor does it tend towards tidiness. Place all old Cabbage, Turnip and Cauliflower leaves in a position where farmyard manure can be added to them, and in due time they will provide suitable manure. Pea and Bean stalks and Potato haulms should be burned and the ash utilised for the garden. When the ground is dry wheel manure on to the sites which are to be dug and trenched during favourable weather.

ALPINE GARDEN.

ROCKERY PLANTS FOR LATE SUMMER AND AUTUMN PLANTING,

All lovers of alpine plants desire to have flowers on their rockery each month of the year, yet the chief beauty of the rock garden is found in spring and early summer, most of the plants finishing their blooming by the end of June. There are a number of alpines that will continue to furnish flowers from June to September and by planting certain bulbous species, such as Colchicums, Crocuses, including C. cancellatus, C. Salzmannii, C. sativus, C. speciosus, and C. zonatus, for autumn and early winter flowering, and for winter blooming, C. ancyrensis, C. biflorus, C. Imperati, and C. Sieberi, delightful patches of colour will be provided in the dull season; these bulbs look best when planted in clumps of from six to twelve. There are also the hardy Cyclamens, including C. hederaefolium, and its variety album and C. europaeum. Another pretty autumn-flowering bulb is found in Leucojum autumnale, which has pink and white flowers,



GARDCHRON

FIG. 105.—CAMPANULA PORTENSCHLAGIANA.

The following is a list of plants that will flower intermittently from June to September. They vary in height from a few inches to one-and-a-half feet, and all are well suited for the rockery and will grow in ordinary well-drained soil: Androsace lanuginosa and its variety Leichtlinii; Asperula Gussonii and A. hexaphylla; Calamintha alpina; Callirhoë involucrata; Campanula carpatica; C. c. alba, C. c. Little Gem, C. c. Isabel, C. c. pelviformis, C. c. Riverslea, C. garganica, C. g. alba, C. g. hirsuta, C. Hendersonii, C. Portenschlagiana (Fig. 105), C. pulla, C. pusilla and its variety alba; Cyananthus lobatus, Erodium macradenium, Geum Borisii; Inula acaulis and I. ensifolia; Linaria alpina, L. a. rosea, L. repens alba, L. hepaticaefolia, Lithospermum prostratum and its variety Heavenly Blue; Mazus Pumilio, Margyricarpus setosus, Nepeta Mussinii, Omphalodes verna and its variety alba; Œnothera macrocarpa; Œ. speciosa and Œ. s. rosea; Nierembergia rivularis; Plumbago Larpentae; Potentilla formosa; P. Hopwoodiana, P. Tonguei; and P. Miss Willmott; Polygonum Brunonsis, and P. vaccinifolium; Sedum kamtschaticum, S. k. fol. variety, S. Sieboldii, S. spectabile and S. s. Brilliant; Silene maritima plena and S. Schaftae; Statice incana nana and S. Gmelini; Stokesia cyanea praecox, S. alba and S. rosea; Teucrium aureum and T. Chamaedrys; Thymus Serphyllum citriodorus fol. argentea and aurea variegata; Tunica Saxifraga; Veronica prostrata, Verbena venosa, Zauchneria californica and Z. c. splendens. *W. Logan.*

AUBRIETIA TAURICOLA ALBA.

Aubrietias abound, and their names grow more and more numerous every year, as new varieties come into the market. Some of the older forms may well be excluded in favour of the finer new varieties, but the little A. tauricola alba well deserves the consideration of the grower of rock plants. The name of alba, as applied to its floral colouring is hardly justified, as the blooms change in colour and a plant in flower shows some lavender or lilac blooms among the white ones. But this is no great detraction, for we can appreciate this Aubrietia for its dense, close habit, which makes it of considerable value in certain parts of the rock garden where compactness is desirable. A. tauricola alba flowers early and long.

GUNNERA MAGELLANICA.

This is a queer little Gunnera which is attractive in its own way, especially in a peaty bed at the base of the rock garden. It does not possess a reputation for perfect hardiness, but I know a plant in a Scottish garden where it has been in a shaded, peaty bed for quite a number of years. It is a curious little plant with its rough leaves and general air of detachment from the other flowers beside which it grows in the garden. *S. Arnott.*

NOTES FROM A WELSH GARDEN.

Saxifrage Fortunei appears thoroughly to have enjoyed the wet, sunless weather of the past few months, and the mild and bright autumnal days now prevailing (mid-October) are most suited to its flowering period. We give this Chinese species rather cool treatment in semi-shade, the soil being rich, but well drained. Its glossy, deep-green, prettily lobed leaves are attractive in themselves and make an admirable setting for the tall sprays of milk-white blossoms which, given normal weather conditions, will continue until late November.

The dampness of the later summer was also favourable to the Globe Flowers, these handsome subjects having given an unusually fine autumnal display of blossom. The beautiful Omphalodes cappadocica, though always a reliable second-cropper here, is also better than usual, and one of its waterside companions, Parochetus communis, if it is not doing so well with us, is, in a neighbour's garden, covered with its azure-blue flowers.

In the rock garden there has not been so little colour at this season for many years, but some large clumps of Polygala Chamaebuxus purpurea, a broad-leaved, large-flowered form is a mass of rosy purple and yellow. This is very faithful to its reputation as a late-autumn bloomer, and the flowers are as large and numerous to-day as they are in spring. Some of the dwarfer, shrubby Potentillas are still quite gay also, notably P. arbuscula and the charming little P. argentea nana, both with yellow flowers. With its foliage going off in rich tones of crimson and vermilion Ceratostigma Larpentae is still bearing a full complement of its lovely blue blossoms, as also is the much taller C. Willmottiae. There seems to be little doubt but that the latter shrub blooms much better on the shoots of the current season's growth, which necessitates the cutting out of as much as possible of the old wood in spring. Whether anyone ever indulges in the practice of reducing the whole plant to the ground level at that season, as we do with C. Larpentae, I do not know, but one feels inclined to make the experiment.

Plants of Daphne Cneorum on a westerly slope are flowering nearly as freely as they do in spring. What the effect of this is likely to be on next year's crop of bloom I do not know, for D. Cneorum has never before developed more than an odd flower or two at this season. Oddly enough, I understand that this species is generally considered a regular autumn-bloomer in the gardens of many parts of North America. On the same slope as the above is the pretty, blush-pink Convolvulus cantabrica and, in partial shade, are some broad masses of Geranium Wallichianum, E. C. Buxton's variety. The latter is invariably at its best about this time of year, the saucer-shaped, Nemophila-like flowers being an even clearer blue and produced in amazing abundance all over the trailing stems. That extraordinarily prolific and vigorous hybrid, G. Russel Prichard, with silvery leaves and brilliant rosy-carmine blossoms, is also as full of colour as it was at midsummer. Though not a choice plant, G. Lowii, a biennial, is often remarkably effective at this time of year, its two-feet stems and broad, deeply-cut leaves changing to an intense crimson.

Some of the Sedums are also very remarkable for their leaf-colour at this season. S. spathulifolium is one of these, one form in particular having very large rosettes whose outer leaves are now a vivid crimson. The old S. spurium assumes a fine red tint as the leaves die away, as does that admirable late-flowering species S. pulchellum. S. ternatum and S. Nevii become a soft tawny-yellow as autumn advances, and it is now that that charming little plant S. brevifolium, var. Pottsii, takes on its winter hues of bluish-white and Plum-red. Nor is the glaucous foliage of that interesting species S. amplexicaule ever so attractive as it is just now, and the same may be said of S. Palmeri. This is one of the hardiest and most delightful of the Mexican Stonecrops and one that would always be worth a good place for the beauty of its soft emerald green foliage alone, but it possesses in addition to this bold heads of blossom which have few rivals among their kind.

Œnothera taraxacifolia is flowering not less freely than it was in summer, its trailing stems being nearly a yard long. Œ. marginata (eximea) is an even choicer plant, whose silvery, white-ribbed leaves are not nearly so incised at the margin as are those of the foregoing; but the flowers are even larger, often over five inches across, and their fragrance is delicious. Œ. marginata, however, differs in one important particular from its rival with the Dandelion leaf, *i.e.*, it grows in a tuft and does not put forth the long flowering stems common to most Evening Primroses of this class. Albeit it spreads by suckers, and if by any chance the main plant should be lost in winter, one or two of these offsets generally manage to survive. This beautiful species appears to be getting scarce, but it is quite hardy in any warm, dry soil, and, being entirely herbaceous, it is always possible to give it a surface covering where this seems desirable.

Hypericum patulum Henryi is flowering in the woodland, as it is wont to do at this season, but a more uncommon and probably less hardy species now bearing its large golden flowers with very prominent tufts of stamens is H. chinense. Perhaps the most remarkable feature of the season among shrubs is the blooming of the Cistuses, some of which are nearly as gay to-day as they were in June. This is especially true of C. florentinus, C. corbariensis, C. obtusifolius and C. Gauntlettii. The last-mentioned might be described as a robust, very floriferous and compact "Sunset," the flowers being of an unusually deep colour.

Abelia grandiflora is a pretty autumn-flowering shrub, here about four feet high. It appears to be quite hardy, which cannot be said of A. floribunda, under which name it is not infrequently seen, and its graceful branches, with their glossy, dark-green foliage, will be laden with the fresh pinky-white tubular flowers until the advent of frost. Yet another all-season bloomer is an attractive shrub that came here under the name of Malvastrum phoeniceum. It has an erect habit, glossy-green, deeply-cut, Mallow-like leaves with cup-shaped flowers of rosy purple, borne singly at their axils.

Our Heath garden, consisting as it does of a very dry slope, has appreciated the wet season, its occupants flowering with unusual vigour. Always conspicuous among the last to bloom are E. ciliaris, E. Maweana and E. Watsonii, the two last-mentioned possessing the large flowers and other distinctive features of the Dorset Heath. Of E. vagans one has in the interests of space to be content with a few of the best, among which St. Keverne stands out pre-eminent. E. Williamsii, which evidently possesses vagans "blood," is also a late bloomer of distinction, and one cannot say too much in praise of Daböecia polifolia, especially the varieties alba and atropurpurea.

Verbascum olympicum is a remarkably handsome woodland plant for late flowering, and few subjects will maintain so large a head of blossom for so long a period as this noble Mullein. The woolly leaves are extremely ornamental and the main stem, rising to eight feet or more, is accompanied during autumn by numerous lateral growths, all of them bearing a copious succession of large flowers in a good, full-toned yellow. Though a biennial V. olympicum may be raised from seeds as easily as a Foxglove. *A. T. Johnson, Talycafn, N. Wales.*

HARDY FLOWER BORDER.

HERBACEOUS PAEONIES.

The beautiful autumnal tints of the foliage of Paeonia sinensis, or double Chinese Paeonia, are of sufficient worth to recommend this species for extensive garden planting. During the later part of September and October the delightful range of bronzed and crimson-tinted foliage is as effective in the herbaceous borders (and quite as pleasing) as most of our autumn flowers, and when the foliage is cut and placed in vases with Chrysanthemums the effect is most glorious. It is well known that most varieties of Chinese Paeonies are delightfully Rose-scented, and it is generally accepted that their handsome, large, double flowers during summer, varying in colour from snow-white to blush-rose, pink, and from bright and deep crimsons to flaming reds, are second to none in the borders.

The plant's cultivation is of the simplest; they succeed in any ordinary, rich garden soil that has been previously well dug and manured. The plants should be allowed plenty of room, each specimen requiring at least a square yard of ground, and they should be left undisturbed for years, giving the roots a mulching of well-rotted manure during the winter, and copious supplies of water during their growing season. An important detail is, not to plant too deeply, and the ground should not contain fresh manure. Early planting is advisable to ensure the finest blooms. A few of the best varieties are as follow:—

Albert Crousse, shell-pink; Carolina Allain, blush white; Duchess de Nemours, pure white; Fairy Queen, blush white; Felix Crousse, bright red; Festiva maxima, very free and snow-white; Germaine Bigot, lilac-rose, very large; Humei Carnea, flesh-pink; Jules Calot, carmine; L'Admirable, large rose-coloured flowers that develop late; Lamartine, bright pink; La Tulipe, blush-white; Lord Derby, dark reddish-crimson; Madam Coste, a most beautiful Hydrangea-pink; Marié Lemoiné, creamy-white; Mons. Boucharlet, lilac-rose; Suzanne Dessert, clear mauve, splashed crimson; and Virginie, soft pink. Of the single Chinese Paeonies, which are much prized for cutting as well as being effective in the borders and equally as hardy as the double forms, there are:—alba grandiflora, pure white; Duchess of Portland, pink; Festiva fragrans, rose; Lemon Queen, pure white; Milton, crimson; Queen of May, rose-pink; The Moor, maroon-crimson; and Whitleyi major, pure white. *W. L.*

GAURA LINDHEIMERI.

In the notes on plants at Wembley (p. 267) there is a well-deserved appreciative notice of Gaura Lindheimeri, one of our most ornamental of border plants. It is rather unfortunate, however, that it is not hardy everywhere, and those who live in cold districts generally find that it is necessary to raise it from seeds almost annually, although it is a true perennial.

With its fine spikes of rose coloured flowers rising to a height of about three feet, it is a good border plant, and is for garden purposes the best of the eighteen species known, only a few of which are in cultivation. Although introduced from Texas more than seventy years ago, it is not common in gardens. *S. Arnott.*

CALENDULA OFFICINALIS.

Some of the modern forms of the Pot Marigold are exceedingly beautiful and it would prove extremely difficult to find any more effective orange-coloured flower than that of the double variety known as Prince of Orange or the equally brilliant Cockade.

These plants not only beautify the border in summer, but they carry their season of flowering late into the autumn.

A bowl of these flowers in a dwelling room is very pleasing and they last extremely well in a cut state. *R. E. A.*

PUBLIC PARKS AND GARDENS.

The Skegness local authority proposes to spend £25,000 in the development of the central portion of the Marine Gardens. In addition to a large bandstand, the central area will be laid out with walks, flower beds and rock gardens. The scheme also includes the formation of another bowling green, two additional tennis courts, and the planting of shrubs around the lake. The first portion of the scheme, costing £10,000, is expected to be completed in readiness for next season.

Application has been made to the Ministry of Health by the Abersychan, Panteg and Pontypool Urban Councils for sanction to borrow £17,000 for the purchase of property for the purpose of public walks and pleasure grounds.

Edmonton Urban District Council proposes to expend £4,100 for the purchase of land at Lower Edmonton for a park and a considerable sum for laying out the same.

The Miners' Welfare Fund has recommended a grant of £3,000 towards laying out the Coffee Tavern Field, Merthyr Tydfil, as a recreation ground.

Upminster, Essex, has made provision for the borrowing of £800 for the purchase of land for public walks and pleasure grounds, and it has been decided by the parish council to apply to the Public Works Loan Commissioners for the necessary money.

An agreement has been reached for providing an open space of 1·24 acres in the Grotto Place area, Southwark.

Haworth District Council has decided to take steps to procure land on the west side of the River Worth at Haworth for the purpose of a recreation ground and park.

Mr. R. G. H. Snook, Chairman of the Cardiff Parks Committee, has purchased one hundred and thirteen acres of land at Wenallt, Rhiwbina, which he is prepared to hand over to the Corporation for the purpose of a public park or for any other use, at the price he paid for it. The Council decided that the chief parks officer should report fully on the land as to the uses to which it could be put, and when this report has been received it will be considered at a special meeting of the Parks Committee on the site.

Considerable alterations are to be carried out at Victoria Park, Bath. It is proposed to make a large Rose bed on the band lawn; a small lawn, close to the Marlborough Lane main entrance, will be laid out and made more attractive with flower beds and Roses. On the right hand, inside the Park gates, it is suggested to plant two groups of pillar Roses, and pillar Roses will be planted on each side of the entrance to the roof garden. In front of the new building it is intended to plant flowering shrubs, in continuation of those in front of the original building. On the right hand side of the main drive of the park, where now there is a vase with a bed around it, it is proposed to make three more large beds to be planted with Begonias next summer, while the bare space near to the beds by the Brock Street entrance will be beautified by a group of four pillar Roses.

The annual outing of the employées of the Southend public parks and gardens held recently was made the occasion of a presentation of a writing case and fountain pen to the superintendent, Mr. A. Keeling, by the members of the Parks' staff as a mark of their esteem; a presentation was also made to Mrs. Keeling. The party numbered eighty-six in all, and the outing took the form of a charabanc drive through Kent, via Tilbury, to Maidstone. Mr. Lee, in making the presentation, said it would be impossible by words merely to thank Mr. and Mrs. Koeling for all they had done for the Park staff, and especially to make these outings a success. As showing the varied duties of a park superintendent, Mr. Keeling, in thanking the staff for the presentations, stated that on the Sunday afternoon preceding the outing he had to employ thirty of the staff in clearing up rubbish and litter in the public parks and gardens. He stated that they were busy making a golf course at Belfairs; whilst improvements at Southchurch Hall Park and Sutton Road were in hand.

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

CHARIEIS HETEROPHYLLA, SYN. KAULFUSSIA AMELLOIDES.

This pretty, blue-flowered annual, which grows from six to eight inches tall, is very suitable for pot culture, especially for the small greenhouse.

Seeds may be sown during September and the plants wintered in cold frames, or a cool, airy house, or again about the beginning of March, sowing the seeds in a cool house. The seedlings should be pricked off into pans or boxes and, when large enough, four or five plants may be placed in a forty-eight sized pot, in which they should be flowered. Beyond careful watering and the usual cool, airy treatment, this plant does not require any special conditions.

KOCHIA TRICHOPHYLLA.

This annual, known as Summer Cypress, Belvedere, or Burning Bush, is very useful for decorative work, its soft green colouring rendering it very useful for mixing with flowering plants; it is also excellent for decorative work in the dwelling-house.

When the plant reaches the flowering stage, with full exposure to the sun, the foliage turns to brilliant carmine and blood-red.

Seeds should be sown in a cool house during March, and the seedlings potted on until they are in six-inch or seven-inch pots, in which size good specimens should be produced. This plant grows freely in any good potting compost, and should be grown in perfectly cool conditions, with plenty of air and exposed freely to the sun.

LATHYRUS AZUREUS.

The plant usually offered under this name is a variety of L. sativus; it is usually sold as "Lord Anson's Blue Pea," which is a very different plant, being a perennial species. The plant under consideration has pretty blue flowers. When grown out-of-doors it is usually about one foot in height, while grown indoors in pots it may attain a height of eighteen inches to two feet.

Seeds may be sown during March in a cool house, inserting five or six seeds in a six-inch pot, in which sized receptacle the plants should be flowered. The slender shoots should be given timely support with a few slender Hazel twigs. Beyond the usual cool house treatment its successful cultivation does not present any difficulty.

LATHYRUS ODORATUS (SWEET PEA).

There are now many fine varieties of Sweet Peas which are largely grown indoors for market purposes, but they require special conditions and suitable houses. However, in many private establishments there are houses that are well adapted for the cultivation of Sweet Peas in pots.

Seeds should be sown in cold frames from the middle of September to the middle of October, either in pots or boxes. If sown in boxes they should be set two inches apart so that the seedlings may be readily lifted for potting. Where only small quantities are grown it is just as well to sow them direct into pots, placing three or four seeds in a large sixty-sized pot, or in a forty-eight-sized pot. The seeds should be covered with half-an-inch of soil, and this depth should not be exceeded, as seeds of the lavender, cream and white varieties are very apt to rot. Certain varieties have very hard-skinned seeds, and such are often slow and uncertain in germination; to obviate this a tiny piece should be chipped off the side of each seed with a knife. To prevent attacks from mice the pots or boxes should be covered with sheets of glass, or the seeds coated with red lead before sowing; they should also be shaded until they have germinated. The germinating seedlings should have plenty of air on every possible occasion, removing the lights altogether during fine weather. It is important that the plants should be grown in perfectly cool conditions; in fact, they may be stood outdoors all the winter at the bottom of a sheltered wall. Whether they are grown outdoors or in frames, they must be protected from sparrows, which are very fond of the succulent shoots. Under the conditions I advise they will make very little top growth, but such as is made will be strong and sturdy; and when the plants are potted early in the New Year, and grown under different conditions, it is surprising how quickly they will develop.

Plants that have been growing in boxes all the winter should be placed in 60-sized pots early in the New Year, afterwards growing them in a cool greenhouse or close frame; while plants that have been grown in pots should be shifted into receptacles of a larger size.

In about six weeks they should be ready for transference to their flowering pots, which may be ten or twelve inches in size; boxes or tubs may also be used.

The potting compost should consist of good loam that has been stacked for twelve months, with the addition of a little well-decayed stable manure, sand, and a six-inch potful of fine bone meal to every bushel of soil. If the plants are restricted to single stems and disbudded, three or four specimens may be put in a ten-inch or twelve-inch pot. If allowed to grow naturally, two, or at most, three, plants are sufficient for the same sized pots. After re-potting, water should be afforded very carefully until the plants have made a quantity of fresh roots. When they have well filled their pots with roots, and are approaching the flowering stage, they should be fed with diluted liquid manure twice a week. The shoots should be kept regularly tied to neat supports, Bamboo canes being best for this purpose if specimen plants are grown; if intended for furnishing a supply of cut flowers they they may be trained to wires. Although any of the numerous varieties of Sweet Peas may be grown in pots, the following varieties have proved specially suitable:—Melba, King White, Elfrida Pearson, Mrs. Cuthbertson, Wedgwood, Dobbie's Scarlet, Dobbie's Cream, and Charles Foster.

Success depends very largely on keeping them quite cool when they are making their growth. When the flower buds are showing the night temperature should be from 45° to 50°. On bright days a rise of from 10° to 15° may be allowed, with well-regulated ventilation. On dull days a lower temperature should be maintained or the growth may be weakened.

The winter-flowering varieties are largely cultivated in America, but in this country very few are grown, our lack of winter light no doubt making success less certain. If seeds of the winter-flowering varieties are sown during August, the plants should commence to flower about Christmas, and by making later sowings a succession may be kept up until the ordinary varieties come into flower during April and May. But in my experience it is doubtful if they justify the room they require at a season when available space under glass is reduced to a minimum. *J. Coutts.*

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.

VII.—A Reconnaissance.

On May 12 plant-hunting began in earnest, and I started up the mountain on a reconnaissance. Working round the exposed flank to a glen, I soon left the thorn scrub (consisting, as usual, chiefly of Caragana, Sophora, Rosa sericea, Ceratostigma, Buddleia, and Oak) behind, and found the hillside well clothed with Birch and Willow, amongst which bushes of the "Taliense" Rhododendron (Figs. 106 and 107) were flowering splendidly. It is a good plant. The flowers have a wide range of colour, from carmine, through rose pink, to white; but the buds are always carmine, and several shades of pink may be displayed on the same bush. It has a vertical range of about 3,500 feet, but does best in the Picea forest at about 11,000 feet, where conditions are in no-wise extreme. At lower elevations I saw plants eighteen inches high in bloom, but in the forest it forms a tree of twenty-five feet to thirty feet high, such a mass of pink bloom as defies description. From the top of the cliff one looked down through the Fir trees on to frothing seas of pink and white blossom where the gnarled trees clung to the crags. It was far finer here than where we first saw it in flower ten days before; if I was disparaging then I am enthusiastic now. Finally it breaks late at its lower limit, towards the end of May, but higher up in the forest scarcely before June.

Then, down in the Birch wood were drifts of the purple-flowered "Lapponicum" Rhododendron, smothered in blossom. Though the colour is not exceptionally good, these purple seas lapping round the silver masts of the Birch copse were indeed beautiful. The "Triflorum" Rhododendron grew here also, and to perfection, in a wide range of tints, from clear yellow to shades of ochre and mahogany, and even a salmony pink. It grows commonly in the Pine forest at an altitude of about 10,000 feet, flowering freely as quite a small shrub; but it fares better on half-sheltered slopes where the silver and malice green of Birch copse is a feature. Like the "Taliense," the "Triflorum" is only just beginning to break at the end of May, but it does not extend so high as the former.

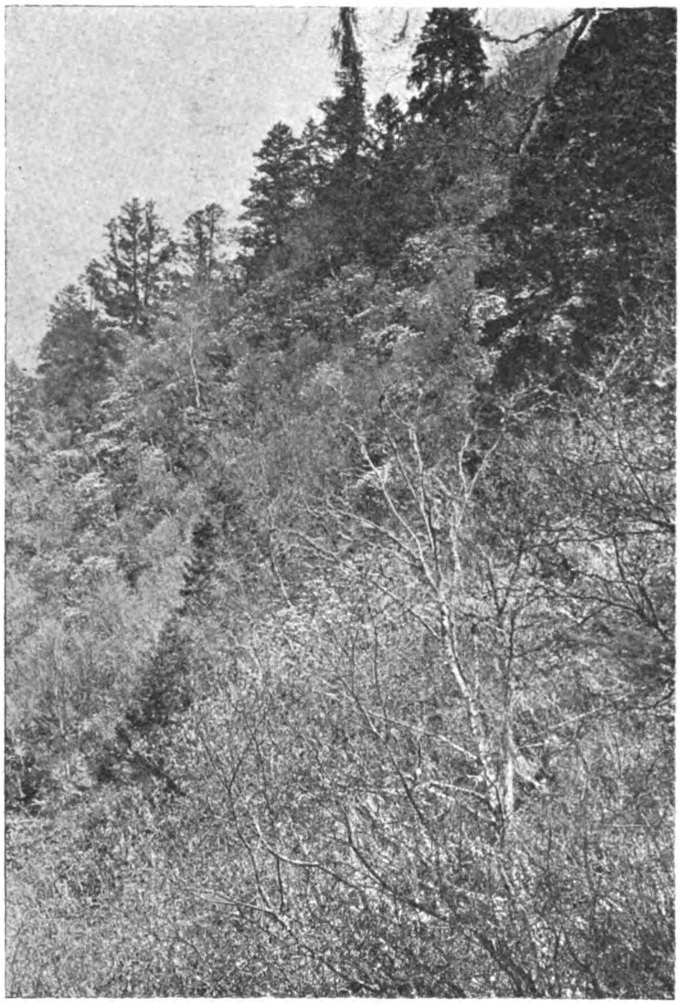


FIG. 106—THE FIRST FOREST OF PICEA, WILLOW AND BIRCH, WITH TALIENSE RHODODENDRON, K.W. 5640.

These three comprise the low level Rhododendrons in this part of the valley. It may be remarked that the soil here is very gritty—sand and gravel derived from granite and schist, very well drained. The slopes for the most part are very steep, with broken cliffs, to which the "Taliense" Rhododendron alone manages to cling. At little over 10,000 feet I was surprised to find a charming Cassiope, which by the last week in May was in full bloom. It did not differ conspicuously from several high alpine species (such as C. myosuroides), but coming from such a happy altitude is far more likely to prove tractable at home. This species grew on the grassy banks of a small stream, under the shadow of the Rhododendron bushes. Along the same bank, in damp ground, a charming Anemone was coming into flower, with petals like watered silk, white inside, blush without. Masses of the fragrant "Denticulata" Primula with fine spheres of mauve flowers also lined the bank; by the end of May these were already passing into seed.

Ten days later, along the same channel, two delightful ground Orchids, one of them with spikes of sweetly-scented, olive-green flowers, the other with peculiar slipper-like flowers, of which I have never seen the like, were in bloom. But to return to May 12 and the early Rhododendrons. Climbing up the steep glen, at about 11,500 feet, one entered the Rhododendron forest, and here I found one of the most lovely species so far met with. At first I took it for a "Barbatum" by reason of the bristling petioles; but neither leaves nor capsules supported this, and it was without doubt a "Campylocarpum." The truss has never more than four, often only three, flowers, on rather long pedicels, so that they nod freely. The corolla is large, open bell-shaped, rather deeply cut, and of the most delightful soft shade of pink imaginable; on the outside it often shows broad bands of pink and white alternating with each other.

In the depths of the glen, a fine "Grande" formed the bulk of the forest, but it was scarcely in flower yet. It bears tight trusses of rather small flowers, white with a single purple blotch at the base; but these are frequently destroyed, or at any rate damaged, by small birds. It is a handsome tree, nevertheless, with rich green glossy foliage, most variable in shape, and the young shoots crusted with silver. While the "Campylocarpum" keeps to the ridges and higher slopes, the "Grande" fills the bottom of the glen.

Two other species I must refer to here, as belonging to the middle forest belt, though neither was in flower at this time. They belong rather to the exposed flank of the mountain, where Oak forest and the "Taliense" form the bulk of the timber. One was a delightful "Anthopogon" in the wood, forming a shrub six or eight feet high, but in the open it was more compact and bushy. It was in full bloom before the end of May, bearing clots of shell-pink flowers amongst the aromatic foliage, which latter is of a bright, rust-red colour beneath. The plant grows scattered through the forest wherever there is an opening, or in small colonies along the ridge. The other species I am not so sure about, though I take it for a "Lepidotum." It grows best on the open hillside, more or less sheltered amongst Oak scrub, between 11,000 and 12,000 feet altitude. Here it forms erect, rounded, cushion-like bushes, not above two feet high. It is more compact and tidy, not so straggling and twiggy as the "Lapponicum," nor so tall. The flowers are borne in pairs on pedicels one inch-and-a-quarter long; but there was no sign of flowers at the end of May, and I am anxious to know what they are like.

Writing of the "Lapponicum," I may mention here that it varies greatly in colour. I referred to it earlier as rose-purple, drying to lavender, and that is perhaps its normal shade. But besides a wide range of purples I found two plants with flowers of a peculiarly striking and abnormal colour, the one bright cerise, the other snow-white. On May 14 I climbed to the top of the hill above our lodging, and reached the alpine region; the hill is rather over 14,200 feet high.

On the way up the open flank, I noticed mats of "Ornata" Gentian, and the skeleton of a Morina. Above 12,000 feet we struck on to the ridge and met the Rhododendron forest just peeping over from the leeward flank. Here were the "Campylocarpum" and the "Grande" together in bud, and on the ridge itself the "Taliense" in bloom. A little higher up the two former were replaced by two other species. One of these was a "Souliei," and a very floriferous plant too, though it did not look like flowering for another month. It preferred the forest on the other side of the ridge, no doubt, but strayed frequently into the open, when its foliage took on such a disguise that it no longer looked the same species. The other, a forest tree with glabrous, or almost glabrous, leaves, I could not place at all; it also was some time off flowering. It might be a "Lacteum." Still higher, above the Abies forest, the sheltered flank was covered with a dense Rhododendron scrub, comprising a single species of the "Lacteum" type. It grew two to four feet high, the gnarled bushes growing so closely together as to form

---

The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30, and September 27, 1924.

impenetrable thickets; but its curled leaves still hung down stiff and lifeless—indeed snow lay deep under the bushes.

The windward slope was likewise clothed with Rhododendron, in this case with close set brooms of "Lapponicum," and an occasional, stunted "Anthopogon," all of them as inert as the other. How many species of "Lapponicum" were mixed up in this twiggy confusion it was impossible to say till they flowered, which would not be before June. Probably there were not more than three species here. Except for the "Denticulata" Primula there were no flowers yet on the Alp. Later there would be meadows of Iris and Primula sikkimensis at any rate.

Before the end of May we had made two brief sorties from our base, to places each a day's journey distant, but without any very striking success. They were more notable for promise than for achievement. True, we found a woodland Meconopsis of the barbed-hair type in bud, but it did not look very exciting; though the fact that it grew so comparatively low down in the forest (10,000 to 11,000 feet) indicated that it would probably be hardy. We also found three Primulas in bloom, the best of them a fine species with flowers of deep cherry-red, the eye almost black, a woodland and alpine plant with a fruit like P. sonchifolia. The other two, though of considerable interest, were of no garden value. One of them came from high up, a little rose-flowered thing starring the turf in the wake of the melting snow. The other was a mauve-flowered "Nivalis," so like P. pulchelloides that at first I took it for that plant, though the foliage is really quite different. It flourished in exactly the same situations too, namely, on sandy banks beneath Oak scrub, on the sunny flank of the hill.

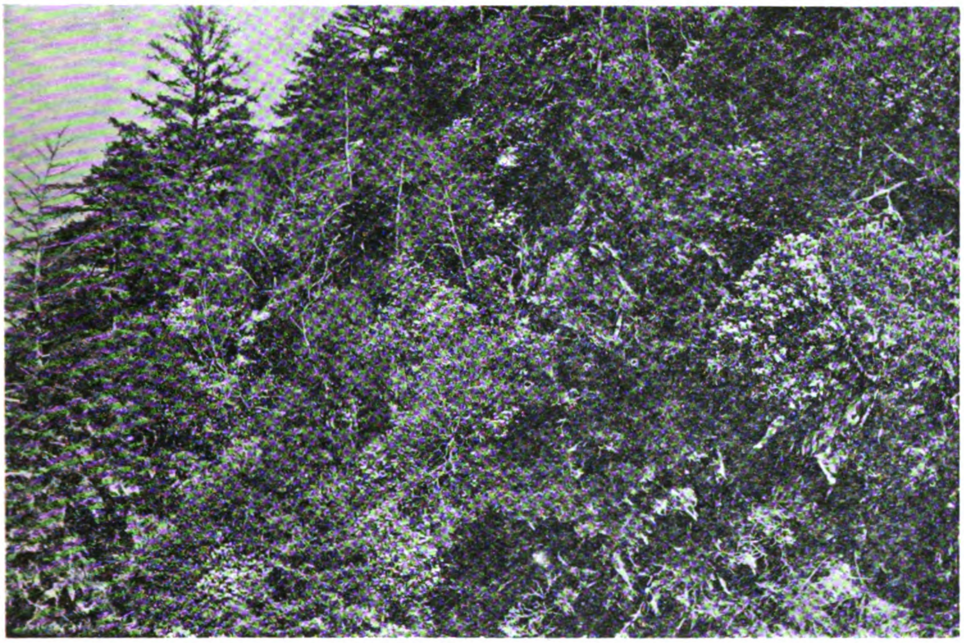


FIG. 107.—TALIENSE RHODODENDRON, K.W. 5640, ON THE CLIFFS.

Finally, I must not forget to mention two high alpine species of Meconopsis, discovered in the course of a second ascent of the hill which overlooked our home. One was in bud, under the rocks, though the almost sessile bud enveloped in a crown of leaves, gave no hint of the full stature of the plant, as indicated by a single fruiting specimen some three feet high. This, too, was of the Polychaetia section, and bore a few, single-flowered, basal scapes. The other, and more abundant species, showed no signs of young plants as yet, though it grew nearly four feet high, bearing a score of flowers on the scape, each carried on a six-inch pedicel. It belonged to the "Aculeatae" group, outwardly resembling M. racemosa, or M. Prattii, though much bigger than either.

It was about May 25 when a great and sudden change came over the weather. The rain ceased, and the snow began to melt with great rapidity; it seemed to be stripped by magic from the lower heights, though above 15,000 feet it still lay deeply enough. Out came the sun day after day, and with it the flowers. The dry hillsides took on new colours; and the billowy blue masses of Sophora, surging over lanes heavy with the Jasmine scent of Oleaster, made a glorious picture. By the streams, clumps of pink-flowered Androsace were blooming; on the rocks, a bright, yellow-flowered Saxifrage; and everywhere trees and shrubs and bushes—golden festoons of Barberry, fragrant Spiraea, Cotoneaster and Clematis—broke into beautiful flower.

Before this time Lord Cawdor and I had seriously discussed the question of moving our base. It was a grave step, not lightly to be undertaken. In a sense it meant starting over again. But, having weighed up the pros and cons, we decided in favour of doing so. It is not necessary to enter here into the various considerations before us; we pitched on a certain valley some three days' journey distant, and it will be sufficient to say that residence there brought us within easy striking distance of the snow peaks. Though by no means the only reason for our decision, that weighed heavily with us. Early in June therefore we dismantled our home, packed up, and on the third day sent the heavy baggage across the river. On the following day we said good-bye to the village which for over three weeks had been our base, and started on a new quest. How this turned out will be related in the course of the next two chapters; it will be enough to state here that we never had any reason to regret the decision. *F. Kingdon Ward.*

NOTICES OF BOOKS.

Dwarf and Slow-growing Conifers.[*]

For many years Mr. Murray Hornibrook has specialised in dwarf and slow-growing Conifers, and he has acquired a very wide knowledge of this interesting group of plants. It is from this store of knowledge that Mr. Hornibrook has produced the book under notice, a work that will be found to be of very considerable use to persons interested in these curious and sometimes weird plants, for the majority are of abnormal growth and some are abnormalities, hence many of them are rarely accounted for in books of reference. This book will be found to be particularly useful to the owners of rock gardens, for many of these dwarf Conifers are peculiarly adapted for furnishing the necessary winter greenery for such places without endangering the health of rare plants in the vicinity by unduly vigorous growth. Moreover, their association with alpine plants is a peculiarly happy one, for the stunted character of many of the dwarf Conifers is reminiscent of the stunted appearance of certain forest trees after they have passed the timber line and become naturally associated with alpine plants.

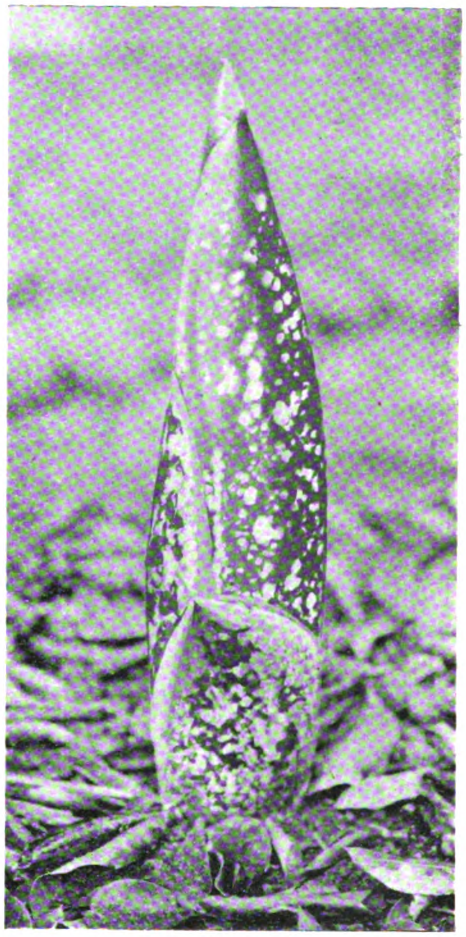


FIG. 108.—AMORPHOPHALLUS TITANUM.

June 5, 1924; developing flower twenty-two days after its first appearance (see p. 392).

The book contains descriptions of some four hundred and sixty plants, the genera Abies, Cupressus (Chamaecyparis), Juniperus, Pices, Pinus, Taxus, and Thuya producing the greater number of varieties.

Mr. Hornibrook is to be congratulated upon his work. The book runs to one hundred and ninety-five pages, and contains a number of good illustrations.

---

[*] *Dwarf and Slow-growing Conifers*, by Murray Hornibrook. Published by *Country Life*, 20, Tavistock Street Covent Garden, W.C. 2. Price 10s. 6d. net.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street. Covent Garden. W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

AMORPHOPHALLUS TITANUM, BECCARI.

THE genus Amorphophallus belongs to the Natural Order Araceae, and many members of the genus are indigenous to the Indian Archipelago.

Armorphophallus Titanum is, I believe, a native of Sumatra, where it grows on the west coast, and is named by the natives "Karaboej." It is a very interesting plant, although not much known to botanists. We have tried for some time past to import a living specimen for the purpose of watching its development. Years ago there must have been one at Buitenzorg, but I cannot find a complete description of this specimen.

A. Titanum, Beccari, is not easy to transplant, as it is generally found on waste land either in leaf or flowering, and whilst in that state it will not survive transplanting, therefore it is necessary to wait until the flower has decayed and the leaves have died down, when the tuber may be dug up, dried in a shady place, packed in dry Moss or other packing material and exported.

A. Titanum is not found in the dark jungle, but likes a half-sunny place. Twice I found the plant amongst shrubs and brushwood in a forest that had been cleared of trees.

Dr. Paul Knuth states in the *Handbuch der Blütenbiologie*, Book III, part I, page 87, that A. Titanum, Becc., was discovered by Mr. Beccari on August 6, 1878, in a forest near Ajer Mantjur, on the west coast of Sumatra, at an elevation of 1,100 feet. The material from this plant is described by Mr. Arcangeli (*Nuov. Giorn. Bot. Ital.* XI, 1897, page 217 to 223). In September, 1878, Mr. Beccari despatched some small tubers to the Marquis Corsi at Florence, who in 1879 sent one of them to Kew Gardens.

The plants sent to Florence died, but the one sent to Kew grew into a strong plant, which flowered in the middle of the year 1889. The total height of the flower was 2¼ metres; the spadix was 1½ metre long; the spathe measured—from top to bottom—1 metre; while its diameter was 1.2/10 metre. The spathe opened for one night and closed like an inverted umbrella (Beccari Fiorit. dell'Amorphophallus Titanum in *Bulletin R. Soc. Toscana di Orticult.* XIV, 1889. Estr.page 1 to 6).

So far as I remember this was the last time A. Titanum flowered or was cultivated in Europe.

[This Amorphophellus has seldom been out of cultivation at Kew since 1889. A specimen flowered there in 1901, from a tuber imported in 1900; other specimens flowered about six and fifteen years later respectively, and we understand that a new and large tuber has recently reached Kew. EDS.]

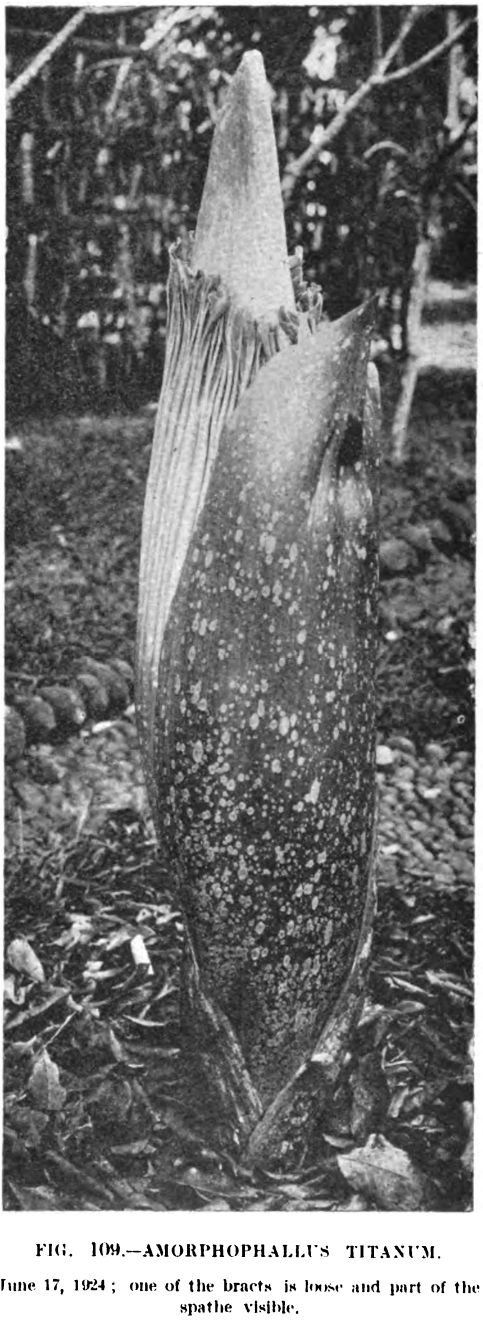


FIG. 109.—AMORPHOPHALLUS TITANUM.

June 17, 1924; one of the bracts is loose and part of the spathe visible.

After this short introduction, I venture to give a description of a plant of A. Titanum that flowered in the Botanical Gardens, Buitenzorg.

The tuber was received from the west coast of Sumatra last March, and had a diameter of 55 cm. across the top: it was 40 cm. in thickness, and weighed 34 k.g. In the centre was a hole of about 12 cm. in diameter, partly filled with the remains of the decayed leaf-stalk. On March 13, 1924, the tuber was planted about 10 cm. underground, in a sunny spot in one of the nurseries.

On May 14 we observed that the bud had developed and burst through the ground, while thick, fleshy, smooth roots on all sides, from close to the top of the tuber were growing downwards into the soil. The three bracts of the bud were at first Moss-green, but afterwards they turned green with white spots. However, it was still a secret as to what the bud really did contain—flower or leaf. Very patiently did we wait for the result. Twenty-two days later, *i.e.*, on June 5 (Fig. 108, p. 301), the bud had attained a height of 55 cm.; the circumference at the base being 35 c.m., and at the thickest part 39 cm. After nine days the last of the bracts had opened and the spathe, which enclosed a part of the spadix, could be seen, the top of the spadix reaching out a little beyond the spathe.

Both inside and out the spathe was light green, but after some days there appeared on the inside small, purple spots, which enlarged each day. The outer surface remained light green with small white spots like those on the bracts and flowerstalk. In twelve days time (June 17, see Fig. 109). the flower had grown 88 cm., and was 1.33/100 metre high, being in the thickest part 90 cm. in circumference.

Two days later it was possible to measure the flower stalk, which was 32 cm. high, the colour being the same shade as that of the base of the spathe. The bracts shrivelled and fell away. The total height was 1.69 metre and the length of the spathe, measured from the top to the base, between the highest and lowest points of the edges, 86 cm. The height of the spadix was 1.36 metre and the part reaching beyond the brim of the spathe measured 49 cm. The circumference of the spadix at the brim of the spathe was 48 cm., and the greatest circumference of the spathe was 1.05 metre.

During the following day the stalk did not grow much, its length being 36 cm. on June 24, but in five days the flower was 31 cm. higher and the circumference 18 cm. larger. The height from the ground to the top was 2.61 metres, the circumference 1.23 metre and the flower stalk, at the base, was 45 cm.

Two days before the flower opened the spadix burst (this is not normal) 30 cm. below the top to the base, and through the slit could be seen a fibrous net of thin white substance between the spongy inside walls of the spadix, which were thicker near the base. The spadix was conical shaped, with the broadest part a little above the base. In the smaller base the stamens and pistils grow.

I write of "the flower," but it is not a real flower, only an infloreseense, with male and female flowers reduced to sexual organs—the stamens and pistils. The former are little, yellowish-white organs close under the base, in a circle seven cm. broad. Thereunder, in a spiral line, the pistils form a ring 17 cm. broad; they are bottle-shaped, purple at the top and light purple at the base.

That pollination takes place through insects is not yet certain. I observed that the pollen ripened after the flower closed and it was not possible that pollination took place on the first night that the flower was fully open, as, in the first place, there were no insects about and secondly the pollen was not ripe. Perhaps fertilisation by insects is unnecessary, as I noticed that the pollen fell naturally on the pistils, or it may be we do not possess in Java the insects which pollinate the flower in Sumatra. From time to time, large blow flies touched the upper part of the spadix but never entered (probably attracted by the bad odour!).

On June 24 the spadix began to give forth a disagreeable odour, noticeable when close to it. At noon it was noticed that the edge of the spathe was loosened from the spadix and at three o'clock in the afternoon the spadix began to visibly unfold more and more, and in one hour the flower appeared in all its beauty (Fig. 110). The bell-shaped spathe is light green on the outside, with white spots on it to where the folds begin.

The edge of the spathe is roughly and deeply (5 cm.) serrated. The inside, from the edge to where the folds end, was of a splendid dark purple colour with a satin-like surface, but under the folds it was of a dirty white, with a shade of greenish-brown that became darker at the bottom.

The spadix was oblong, conical, of a dark yellow colour except on the side caught by the sun, where it was of a greenish shade. The odour of the spadix was extremely disgusting and increased in intensity towards the evening and at night, so that the air around for some distance was polluted by it. Sometimes it seemed as though the odour had vanished, then it would appear again, reinforced and enough to make one sick. The foul odour is very difficult to describe—a mixture of rotten shrimps and dead flesh would be nothing compared to it!

The diameter of the broadest part of the spathe was 87 cm. in the evening of June 24, and at the smallest part 76 cm. Next morning they were respectively 1 metre and 1.05 metre. The circumference where the folds begin was 1.20 metre in the evening and 1.30 metre in the morning; the height of the spathe, measured from the base to the top, was 1.02 metre × 1 metre and the total height 2.01 metre.

In the morning the odour was less disgusting than in the previous evening, but quite noticeable to anyone standing near the plant. Hundreds of people, including Europeans, Chinese, and natives, came from all directions to see this rare and curious plant; but many came too late, as on June 27 the spathe closed again, and at 12 o'clock the spadix collapsed over the spathe (Fig. 111) and there was nothing further of interest to be seen.

There have been many observations published on the heat production of some flowers, and I was very anxious as to what would happen with this large Amorphophallus. It seems to me that there must be a remarkable heat production inside the flower, and the results of the measurements are as follows:—

June 19, 5.30 p.m.: air warmth, 28° C.; inside the flower, 32° C. June 19, 9.30 p.m.; air warmth, 24.5° C.; inside the flower, 26° C. June 20, 7 a.m.: air warmth, 23° C.; inside the flower, 23° C., but later, after the sun had shone the whole afternoon on the flower it was, at 4 o'clock, 35° C. inside the flower, while the outside temperature was 29° C.

I was convinced at this stage that there was no heat production in the flower, but that the sun warmth was stored in the space between spathe and spadix, moreover, during the long period of the night there was no difference at all in the temperature.

On June 24, at 5.45 p.m., the air temperature was 26° C., inside the opening of the spadix it was 30° C., and near the stamens and pistils there was no difference. In the opening of the spadix there was a difference of 4° C., but was this heat production of the flower, or merely sun-warmth stored in the spadix?

On June 25, at 8.30 a.m., the air temperature was 25° C., and in the inside of the spadix, 26° C. On June 26, the temperature inside and outside was 27° C.

Every one must form his own conclusions from these temperatures, but I have come to the conclusion that the heat production inside the flower is not so great as I had thought it would be possible.

A fortnight after its appearance the inflorescence of Amorphophallus Titanum was totally decayed, and there was no sign of pollination or fructification. *P. Dakkus, Curator, Botanic Gardens, Buitenzorg, Java.*

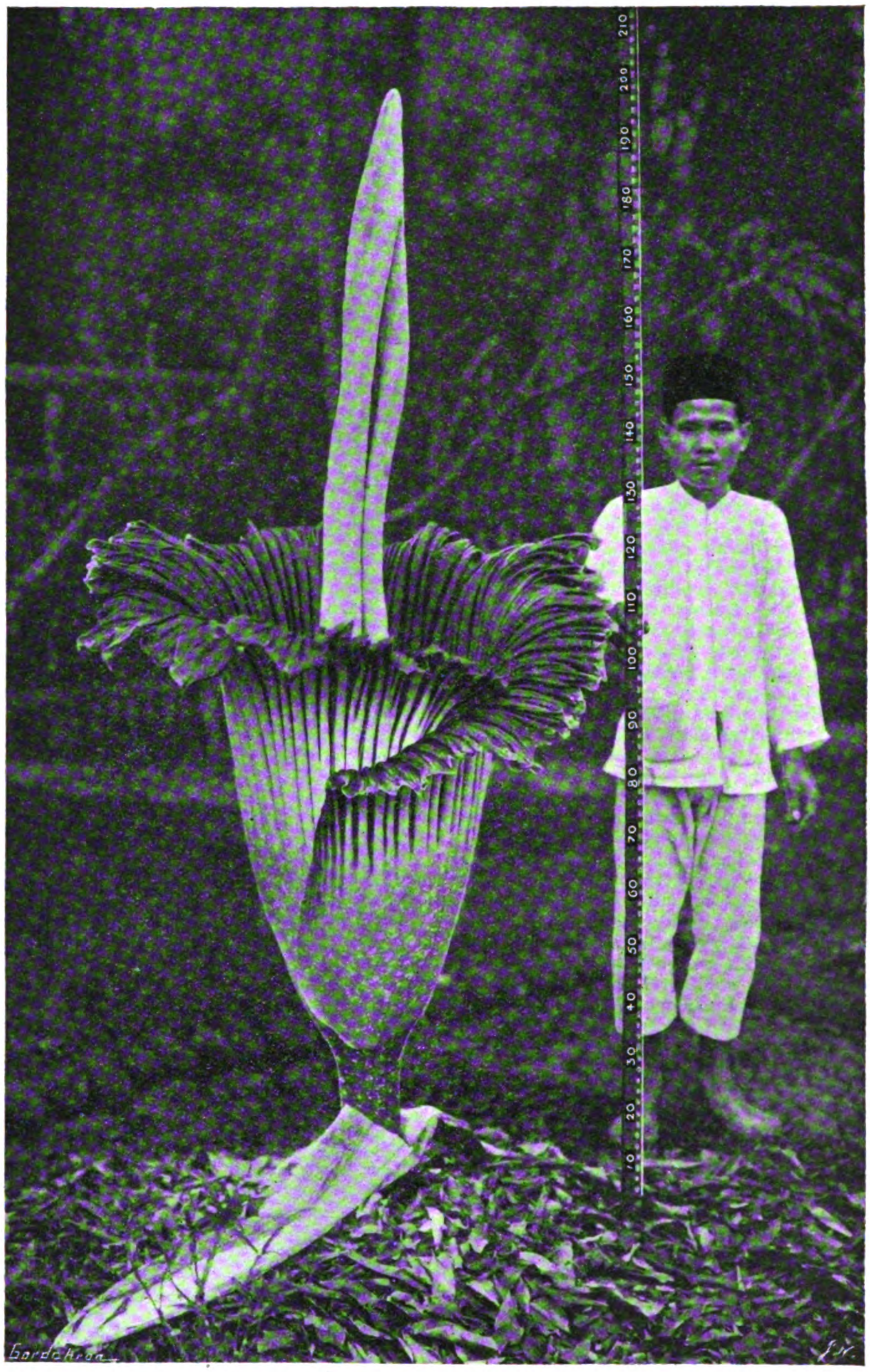


FIG. 110.—AMORPHOPHALLUS TITANUM.
June 24, 1924; spathe fully expanded.

PLANTS NEW OR NOTEWORTHY.

EVODIA QUERCIFOLIA,* RIDL.

IN the *Gardeners' Chronicle* of 1881, p. 785, is figured a branch of a plant called Aralia quercifolia. It was introduced by Mr. B. S. Williams, in 1880, from the New Hebrides as an ornamental pot-plant, and distributed by him under the above name. It appears to have quite disappeared from European cultivation, but plants probably sent by him have been in the Singapore Botanic Gardens for many years, where a considerable number were at one time cultivated. Here it developed into a shrub about four feet or five feet tall, and on flowering showed itself to be a species of Evodia. As it has never been properly described, I give a full description of it under the name of Evodia quercifolia:—

A shrub about four feet tall, quite glabrous, leaves opposite, trifoliate, sub-coriaceous, bright, shining, light green; leaflets ovate in outline, with long, cuneate, margins with about twelve irregular acuminate lobes or large teeth, and terminated by a long tapering acuminate point three-and-a-half inches long and two inches wide; all three leaflets are approximately the same size, but the central one is slightly wider; the petioles a quarter-of-an-inch and the slender petiole two inches long. The small green flowers are borne in dense panicles one-and-three-quarters-of-an-inch long, in the axils of the leaves. The panicle-branches are only a sixth-of-an-inch long; the flowers a tenth-of-an-inch wide; the pedicels about as long; sepals (4) very small; petals (4) oblong, blunt; stamens (4) longer; filaments bent in bud, filiform; ovary four-lobed, on a saucer-shaped disc; style short, columnar; capsule of four cocci spreading in a star nearly a quarter-of-an-inch across. Seed globular, black, shining, New Hebrides (B. S. Williams, introduced 1880).

---

* *Evodia quercifola, Ridl.—Frutex 1 ad 2 m. altus, foliis oppositis trifoliatis, foliolis subsequalibus ovatis profunde late dentatis, apicibus longe acuminatis, basibus cuneatis 9 cm. longis 4 cm. latis, petiolulis 5 mm. longis, petiolis 6 cm. longis gracilibus, paniculis axillaribus 5 cm. longis. densis multifloris, floribus viridibus parvis 3 mm. longis, breviter pedicellatis, sepalis 4, parvis ovatis, petalis 4 oblongis obtusis, staminibus 4 lingioribus, ovario 4-lobo, stylo brevissimo columnari, capsula tricocca 5 mm. lata, glabra, seminibus nigris politis globosis. New Hebrides (B. S. Williams). Henry N. Ridley.*

Most of the Evodias are rather large shrubs or trees of some size, but in the Papuan region we find a small number which form bushes or low shrubs, with the habit of a Panax. Such are this species, and Evodia Ridleyi, Hochr. They attain a height of three feet or four feet, and usually possess a strong, not unpleasant, aromatic odour when broken.

RHODODENDRONS.

VI.—Rhododendrons in the Garden.

(*Continued from page* 286).

R. **Keiskii** is a Japanese "Triflorum," evergreen like R. lochmium. It forms a densely branched shrub, six feet high, with lemon-yellow flowers and red anthers. It is a less sickly yellow than R. lutescens but nothing magical. May is the flowering season.

Rather larger than the "Triflorums" are those Rhododendrons which centre round R. heliolepis or R. brevistylum. They have purple or rose-purple flowers of considerable merit with somewhat silky green leaves, rusty red on the reverse—not woolly, but scaly. In the forests they bulk large as big bushes or stunted trees, not exceeding sixteen or eighteen feet in height under favourable conditions, often growing socially. They flower early and may often be seen covered with blossom and snow. The flowers are borne three or four together in a loose, nodding truss.

R. rubiginosum may be taken as the type. It has rosy-purple flowers with deep red purple anthers, and has the distinction—unusual but not unique—of being able to thrive in a chalky soil. Other species in cultivation, but not perhaps procurable in the open market, are R. brevistylum and R. heliolepis itself, both with rather ruddy purple flowers. The leaves of all three are covered below with a crust of reddish-brown, circular, lepidote scales. They are plants for the copse and shrubbery rather than for the lawn or drive, for company rather than for aloofness. R. rubiginosum flowers in April and May.

Then there is R. Metternichii, a Japanese shrub six feet high, with rosy or rose-purple (or sometimes white) flowers, borne in opulent, corymbose heads. The leaves are provided with a buff-coloured vest, especially in the elfin form of the plant when it becomes a dense three feet bush. R. catawbiense is its American half-brother, rather bigger, attaining as much as ten feet, with lilac purple flowers. This last is one of the hardiest species known.

Many people seem to have a relish for new things simply because they are new. There is no inherent virtue in novelty as such, but it is useless to preach this elementary truth to the extreme left; they itch for novelty; the result is that many good things are passed over in the scramble. One of them is R. dauricum, introduced 140 years ago, yet quite uncommon in gardens. The reason for this may be that it flowers too early, or too late, being a winter-flowering shrub (November to March). People are afraid of the blooms being cut by frost. That, in my opinion, is a risk worth taking; and the fact that it blooms in midwinter vindicates the plant—if vindication were needed. Mr. E. H. Wilson, however, states that the flowers of R. dauricum var. mucronulatum are remarkably resistant to frost, and since, to quote Mr. Wilson, at the Arnold Arboretum, it "never fails to put forth each year a wealth of lovely blossoms which vary in colour from rosy-pink to rose-purple," great things may be expected of it in this country. It first flowered at the age of six in America. R. dauricum var. mucronulatum forms a much branchad, massive bush, six to ten feet high. The leaves are deciduous and tinted in the autumn.

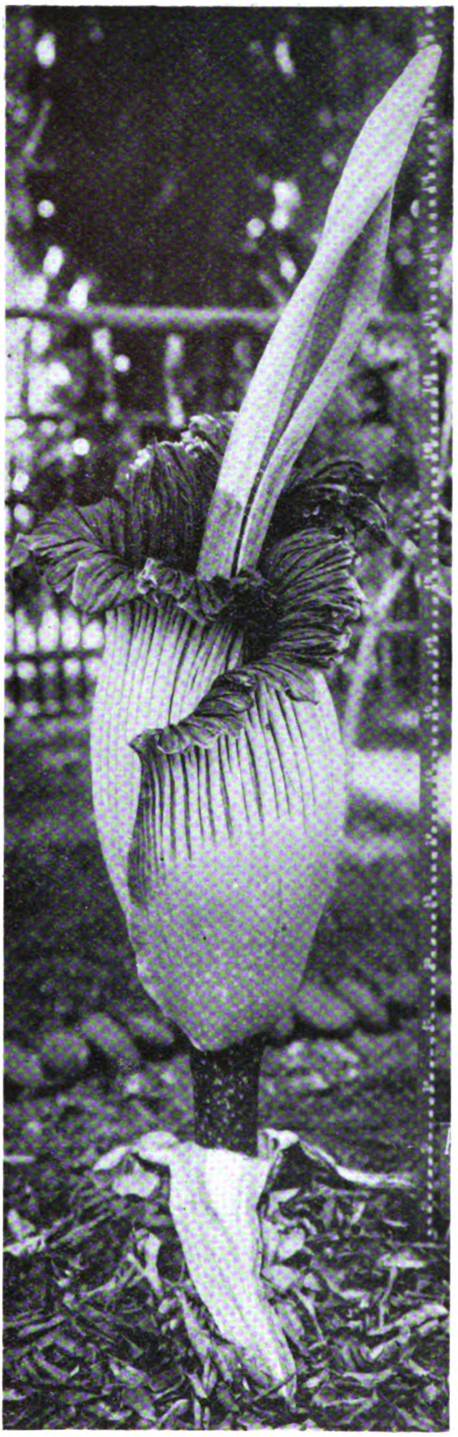


FIG. 111.—AMORPHOPHALLUS TITANUM.

June 27, 1924, 12 noon: spathe closed and spadix collapsing (see p. 303).

It differs from the type in having larger and more coriaceous leaves and larger, more bell-shaped flowers; but unless one has the type (*i.e.*, R. dauricum true) with which to make comparison, this information is not of very much assistance. Whether the plants sold as R. dauricum (or as some pedants insist, R. dahuricum, from Dahur, which is in Mongolia) will be var. mucronulatum, is open to question. And there lies the rub if it is not, then there is no virtue extant. Insist on variety mucronulatum from Korea.

There is a group of tanglewood Rhododendrons, in habit something like "Haematodes" and "Sanguineum," though otherwise very different. That is to say, they are procumbent or ascending, not above waist high, their stout branches intertwining to form impenetrable thickets. R. fulgens grows about four to ten feet high. The leaves are glossy above with a thick rust-red felt below, and the brilliant blood-red flowers are borne in compact hemispheres, opening in March and April. R. Wightii is bigger; a bush from ten to as much as fifteen feet high, with lanceolate leaves, six inches long, smooth cinnamon-red beneath. The plentiful flowers are a fair size, in loose trusses, pale straw-yellow, pencilled with purplish-red. It is one of the Lacteum series, allied to R. Traillianum.

R. campanulatum is in a class by itself—metaphorically speaking. It is a loose limbed bush of exquisite grace, with darker spotted flowers of rosy-lilac or rosy-purple, opening in April. It attains six feet or more in stature. The rounded leaves, covered below with brownish fur are very attractive. R. campanulatum is a Sikkim plant, but it has a near relative in far away Japan called R. brachycarpum. This is a smaller plant, four feet to eight feet high, with rather handsome dark green foliage and fragrant flowers of pallid pink, which hardly open before June.

Another charming species in the same group is R. lanatum. It develops into a well proportioned shrub or a small, gnarled tree up to fifteen feet high, bearing lax trusses of six to eight pale sulphur flowers carefully spotted with dull crimson—a very striking combination. The long, narrow leaves are covered below with a cottony tomentum, white or tawny, which spreads as a ragged fur over the petioles and shoots; hence the name lanatum—"cottony."

Two Central Asian plants, R. Smirnovi and R. Ungernii call for notice, both by reason of the beauty of their foliage and their cast-iron hardiness. R. Smirnovi flowers when a foot or two high, and eventually grows into a handsome six-foot bush, or in its native land at any rate into a small tree fifteen feet to twenty feet high. The leaves are covered below with a buff felt (silvery when young) which clings to the twigs also. The flowers are blush-rose, open, funnel-shaped, large, three inches across with crisped margin, in compact trusses. It flowers in April or May.

R. Ungernii makes a stout bush twelve or fifteen feet high, covered with trusses of white or rose flowers, the upper lobe faintly spotted with green. The corolla is distinctly veined. The leaves are very like those of R. Smirnovi but more lanceolate. The plant flowers very late, in July and August, but only at intervals.

A treatise on Rhododendrons which omitted our old friend, R. ponticum, introduced into England 160 years ago, and seedling itself all over Berkshire, would be like an omelet without the egg. The species is too well-known to need description, and all I need write about it is that is used for stocks for the tens of thousands of grafts which are planted every year.

Other species worth growing for the striking appearance of their leaves are R. argyrophyllum, R. hypoglaucum and R. niveum. R. argyrophyllum is a variable-sized shrub as small as ten feet or as high as twenty feet. The flowers are rose-pink, the sooty anthers clustered strikingly in the centre. But the silver-white felt on the under surface of the long, narrow, lanceolate leaves gives tone to the plant both in flower and out. Though it is a fairly expensive item, on the other hand it is of a cast-iron hardiness and flowering as late as May, escapes damage in three years out of four. *F. Kingdon Ward*.

(*To be continued*).

TREES AND SHRUBS.

EVERGREEN HEDGES.

For evergreen hedges the English Yew is the plant most frequently used, and it answers its purpose admirably, although it should not be planted in positions where it may be eaten by cattle or horses. I know of an instance where a valuable horse died from eating Yew, but I have not known Yew to be injurious to deer, even where it is plentiful in a deer park; possibly deer do not eat it. When well cared for and kept carefully clipped a Yew hedge becomes dense and neat in appearance. The common Holly is another most useful shrub for hedges. It is perfectly hardy, cattle-resisting, and may be clipped or otherwise trimmed. It is, however, not advisable to plant it where rabbits abound, as, should the ground become covered with snow, even for a few days, these pests will bark the plants so severely that death may follow. I have known the Holly and the Apple, and even large Beech trees to be killed by this means. I have also known trees partly covered by drifted snow to be ruined in this way. The Box is also valuable for hedges, and it may be trimmed to a dense surface with comparatively little trouble, and it is not particular as to soil.

Thuya Lobbii is much used, and forms a good hedge. It grows freely and does not object to being restricted in growth. It also makes a splendid shelter or screen. The oval-leaved Privet is likewise a very useful evergreen, and may easily be kept neat, and restricted to a moderate space. I have, in one instance only, met with the Evergreen, or Holm Oak, as a low, clipped hedge, though it is often made use of as a shelter, or screen, for which purposes it answers admirably. The hedge referred to is on the roadside between Broadstairs and Margate, and is pleasing in appearance, rigid and cattle proof. This Oak forms a handsome specimen tree, and if my memory serves me rightly I have seen such at Sandgate as well as a fine Cork Oak. The Euonymus is also a useful hedge shrub, particularly for the seaside, as may be seen in the Broadstairs district, where it is commonly made use of, and thrives splendidly, even on thin soil resting on chalk. The common and Portugal Laurels, and the Aucuba, are well known as being useful for hedges. *Thomas Coomber, V.M.H.*

VITIS THUNBERGII.

Mr. George Hyde Wollaston, Flax Bourton, near Bristol, sends highly-coloured leaves of Vitis Thunbergii with the following remarks:—The leaves which I send to you are from the lower branches of my plant of this vine, which was raised from a cutting from the plant which grows on the old Acacia at Bitton Vicarage. It was from this vine that the description written by Canon Ellacombe for the *Botanical Magazine* was taken. You will note the rich colour of the leaves; also that they are distinctly five-lobed. In this they are quite distinct from the large, entire leaves of several forms of Vitis Coignetiae which are distributed by many nurserymen at the present time under the wrong appellation of V. Thunbergii. When Canon Ellacombe wrote his description of the plant he very carefully warned against this carelessness of nomenclature. Nurserymen seem to have paid no attention whatever to the importance of keeping to the scientific description of this plant.

I believe that it is a rare species, and is not very easy to grow.

The Bitton plant is on a tree; my plant is on a South wall. Neither of them is very happy. I know of no other descendant of Canon Ellacombe's vine in this part of the country.

It is a pity that such a beautiful foliaged Vine should come to be popularly known by an entirely incorrect name."

LONICERA NITIDA.

Lonicera nitida, to which reference is made in the notes on Shrubs at the British Empire Exhibition (p. 267) was sent to me a few years ago as a good shrub for the rock garden. At the same time it was planted in a large rock garden in the north, which I revisited recently. I found, however, that L. nitida was too quick growing for the rock garden unless kept well clipped back, and on revisiting the other rock garden just mentioned I observed that the bushes of this Lonicera had grown quite out of bounds and were much too large for the position they occupied.

As a hedge plant Lonicera nitida seems to be excellent, and I saw a good hedge composed of it lately. It was quite pleasing with its small, glossy foliage, which appears very graceful compared with that of many other shrubs occasionally used for hedges. *S. Arnott.*

OLEARIA FORSTERI.

This New Zealand shrub is not nearly so well known, or grown so extensively, as its merits deserve. In these gardens it is seldom passed by visitors without enquiries as to its name, place of origin, &c., being made.

The pale green, glabrous colouring of the foliage above and white tomentum beneath, with undulating margins, are details which go to make this plant very attractive and distinct from the usual green or grey-foliaged plants with which it may be surrounded. Added to this, the delicious fragrance of the flowers is most pleasing, especially so at this season of the year. Whilst it adapts itself to training as a pyramidal specimen, it may also be utilised as a most effective hedge plant. *W. Honess, Walhampton Gardens, Lymington, Hants.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 78-84).

(*Continued from p.* 287).

ENGLAND, N.W.

Shropshire.—The prolonged and extraordinarily heavy rains of early summer severely affected the early promise of extra large crops of fruit in general. Both leaves and fruits dropped freely, Damsons being the worst failure. Strawberries were very fine, especially Royal Sovereign and Laxtonian. Black fly has been very troublesome on Sweet and Morello Cherries. All fruit trees are healthy and making good growth. Nuts are a complete failure. Our soil is very cold and stiff. *Roger F. Jones, Oteley Hall Gardens, Ellesmere.*

——The fruit crops generally are very disappointing. There was a profusion of bloom, and at first it seemed that a good set was resulting, but results since have proved the contrary. Pears promised better than Apples, but we have scarcely any Pears, although a good average crop of Apples. Practically all stone fruits (Apricots excepted) were complete failures; small fruits were a good average yield. Our soil is a very cold, tenacious boulder clay of very great depth, and imperfectly drained. *E. F. Hazelton, Yeaton Peverey Gardens, Bomere Heath, Shrewsbury.*

Worcestershire.—Considering the profuse amount of blossom on Apple, Pear and Plum trees, the crops are disappointing, probably caused by the continued wet, cold and sunless weather during the whole of the flowering period. In some places in this district there is scarcely any fruit, whilst near by there are fairly good crops. Taken collectively we have about average crops of each of the above fruits. Strawberries were abundant and of good appearance, but deficient in flavour. Peaches and Nectarines on south walls have given good crops and we have had much less Aphis and other pests than usual. Apricots flowered well but the fruits failed to set. Raspberries, Loganberries, Currants and Gooseberries were all abundant crops and good. The staple soil is a heavy, holding loam, on a marl sub-soil. *William Crump, V.M.H., Oakridge, Richmond Road, Malvern Link.*

——The fruit crops generally are below the average. Apples are an average crop, Pears are about half an average crop. Plums were almost a total failure, the only trees carrying a few fruits being of the Pershore variety. Black Currants were very plentiful and the quality was good; the only variety grown in these gardens is Boskoop Giant. Our soil is of a fairly heavy nature. *Ernest Avery, Finstall Park Gardens, Bromsgrove.*

——All fruit trees blossomed profusely and late, so that there was very little danger from late frosts, and record crops were expected after the poor crops of 1923, but rain and lack of sunshine spoilt these prospects and we have only an average crop of most fruits. During May six inches of rain fell. The crops of Strawberries, Raspberries, Gooseberries and Black Currants were well over the average; the last was almost a record crop. Late Strawberries cropped very well and the fruits were of fine quality. Certain sorts of Plums, such as Victoria, Prolific and Cox's Emperor were good crops. The Pershore variety was a failure. Young trees of Apples and Pears are, on the whole, carrying good crops. The soil is of a heavy nature resting on gravel. *G. E. Roden, Everbury Court Gardens, Tewkesbury.*

——The crops of Apples, Pears, Plums, Cherries and Apricots were all under the average, chiefly owing to the after effects resulting from the great injury to the foliage of fruit trees in 1923 caused by the exceedingly cold and strong winds which prevailed in May and early in June of that year. Strawberries and Raspberries were plentiful and very good. Currants and Gooseberries also were plentiful and good. *James Udale, Ombersley Road, Droitwich.*

WALES.

Cardiganshire.—All varieties of fruit trees flowered most profusely in this district, but cold winds and rain damaged the Plum and Pear blossom a good deal, so that the set of fruit was not so good as it would have been under more favourable conditions. The weather was more favourable when Apple trees were in flower, but since flowering some varieties of Apples have been affected with mildew. Apples fruiting freely are (cooking), Lane's Prince Albert, Lord Derby, Annie Elizabeth, Bramley's Seedling, Lord Grosvenor, Chelmsford Wonder, King's Acre Bountiful and Warner's King. (Dessert), Charles Ross, Beauty of Bath, Worcester Pearmain, Langley Pippin, and Christmas Pearmain. The most plentiful of Plums, were Victoria, Pond's Seedling, Czar, River's Early Prolific, Monarch and Transparent Gage. The soil is wet and cold, overlaying slatey rock. *W. Phillips, Derry Ormond, Llangybi.*

——Apple and Pear trees flowered well, but climatic conditions were not favourable at the critical time and the blossom on the Apples withered away. Plums also flowered well, but the fruits likewise did not set well. Cherries and Apricots were complete failures. Small fruits were few; Strawberries were a light crop and the berries of small-size. Nuts are very scarce. The soil is a medium loam, but owing to its position the garden is cold and damp. *D. H. Dunn, Hafod, Pontrhydygroes, Ystrad Meurig.*

Carnarvonshire.—The fruit crops are very light on the whole. All fruit trees bloomed profusely, but most of the blossom dropped without setting, which I attribute to the sunless autumn of 1923, as the wood was not well ripened. Aphis is very bad. Our soil is gravelly and light and soon dries out. *J. S. Higgins, Glynllivon Gardens, Llanwnda.*

Denbighshire.—After a long winter of unusual severity (for this part), also a very late spring, fruit trees generally, with the exception of Damsons and a few Plums, developed an extraordinary amount of good and well-formed blossom. The blossoming period was at least three to four weeks later than usual. Eight degrees of frost was experienced on two or three occasions, but it did little damage, as the nights at the time were dry. During the period when most Pears were in blossom the weather was mostly dull and wet, favouring the spread of scab disease. Pear trees growing against walls have fared somewhat better in this respect. The only sort of Plums that set anything like a crop were Victoria and the Czar, although all blossom was cross-pollinated. Morello Cherries dropped many fruits, for at the time when the blossom ought to have been dry, it was quite the reverse. Strawberries and Raspberries, in fact all small fruit, could not possibly be better. The soil here is for the most part heavy in texture. *R. H. Crockford, Horsley Hall Gardens, Gresford, Near Wrexham.*

——The fruit crops are, on the whole, of average quantity. All kinds of fruit trees blossomed profusely, but many of the fruits failed to set owing, doubtless, to the cold, wet, and sunless condition of the weather during the flowering period. Our best cropped varieties of Apples are Lane's Prince Albert, Bramley's Seedling, Grenadier, Lord Derby, Warner's King, and Worcester Pearmain. Our soil is rather stiff and cold. *J. A. Jones, Chirk Castle Gardens.*

(*To be continued*).

THE VINERY.

RENOVATION OF VINE BORDERS.

When the vines have been cleared of the Grapes no time should be lost in paying attention to cultural details. If the lateral growths have been allowed to extend during the time the Grapes have been hanging they should be shortened to within one bud from where the growth commenced in order that the growth and bud for the coming year may receive all the light and air possible to ripen them.

The borders will naturally be somewhat dry, and will require a good soaking with water; this should be done daily until the border is moistened through, allowing one gallon of water to every square foot of soil. After a day or two the surface of the border will become dry enough to permit of working. I find it good practice to remove all the soil down to the roots, and when this is completed give the border a dressing of some suitable concentrated fertiliser or vine manure. Bone meal is quite safe and good to use. Next apply a top dressing of fibrous loam, wood ash and slaked lime, adding about the same quantity of top dressing as was taken from the border.

Borders will vary as to the depth of soil to be taken away: if in a sour condition it will be necessary to go much deeper until the roots are found, than if it is sweet. When this work is completed give the border a good watering in order to settle the soil again.

When pruning the vines cover the border with a tarpaulin, as this will prevent insects penetrating the new soil used for top dressing. The tarpaulin should be kept on the border until the work on the vines and houses is completed. The treading of the border by the staff while the work is going on will not harm the border or roots; in fact, it will make the new soil very firm, and the borders cannot be too firm to produce good grapes. *E. Neal, Tilgate Gardens, Crawley, Sussex.*

CONCRETE IN THE GARDEN.

The uses for concrete in the garden are many. This is being appreciated more and more, as indeed is concrete generally—Wembley itself being witness.

Concrete roads, which are becoming universal in America, are still something of a novelty here, though an increased mileage is being constructed every year. These roads are durable; they do not collect mud and dirt, and consequently require little cleansing. The advantages that concrete has as a road surface, it has to the same degree for paths in gardens, large or small. Since concrete blocks may be moulded in any shape, the paths may be laid according to taste, regular or irregular. The effect of the irregular paved garden, which is now so popular, can easily be obtained by the simple device of breaking the blocks.

Many who object to concrete because of what they regard as the monotonous grey, are unaware that they may please themselves as to colour, since concrete may be procured in almost any shade. Further, the surface may be rough or smooth, according to desire.

Paths, however, are but one of the many uses to which concrete can be put. It is useful for making edging-tiles for beds, for seats and benches, for steps, and for the framework of glasshouses. Concrete flower boxes are easily made, and if the garden is large enough, the pergola may be of concrete, while concrete balustrades are quite effective and on them may be placed concrete vases. There are sundials of the same material, and concrete may serve to line the artificial pond.

Further, it is possible to make concrete at home at small expense. A handbook supplies the information needed; a bag of cement is purchased, the necessary additions collected to mix with the cement and the rest is easy. *L. Melville.*

HOME CORRESPONDENCE.

Elaeocarpus Ganitrus.—In the interesting article by L. Ruse, of Assam, on page 209, under the heading of Elaeocarpus lucidus, mention is made of E. Ganitrus. This is stated to be one of the two species best known to the natives of Assam. It is also a native of India and the Malay Islands, and in India at least, the use of the hard stones of the fruit for making necklaces, rosaries, bracelets, etc., is well-known. Within the last few months I have seen and handled some of those ornaments. Botanically they are very interesting, because the young fruit consists of three to five carpels, with a corrugated or tuberculated endocarp cohering in one piece: and the shape of this inner fruit or nut is determined by the number of carpels of which it is made up. The necklace I examined consisted of two or three carpels to each nut, and to look at them one would imagine that they must be the product of different species. Those that consisted of two carpels were flattened, convex, and two-angled. Those of three carpels were three-angled. All looked as if they had been elaborately carved and polished; yet all the natives have to do, apparently, is to cleanse them of the external pulp, dry and varnish them. *J. F.*

Verbena venosa.—Viscount Ullswater, writing from Campsea Ashe, Wickham Market, states:—"We have had two long beds of Verbena venosa in the gardens here for three seasons. The plants have flowered well, and this season they have been from eighteen to twenty-four inches in height. We cover them with a little broken Bracken in winter, as ours is a very cold climate during February and March. Under these conditions the plants seem to be quite hardy and improve in appearance every year."

SOCIETIES.

ROYAL CALEDONIAN HORTICULTURAL.

The monthly meeting of this Society was held on October 7 at 5, St. Andrew Square, Edinburgh, Mr. W. J. Thomson, vice-president, in the chair. A lecture, entitled "A Plant and Bird Hunter in the Barra Isles," illustrated by a large number of very beautiful lantern slides, showing the wild scenery and other features of this group of the Outer Hebrides, was delivered by Mr. Robert M. Adam, Royal Botanic Garden, Edinburgh. At one time 200 people found a living on these islands, but now the population has vanished, and the islands are practically given over to the vast numbers of sea fowl of various kinds which find in them a congenial breeding place.

The exhibits were:—Dahlias and Pelargoniums, from Messrs. Dobbie and Co., Ltd., Edinburgh; Seedlings of Dahlia Coltness Gem, from the Edinburgh Public Parks Department; new Early-flowering Chrysanthemum Mrs. E. A. Jamieson, from Mr. F. Glass, Prestonfield Gardens, Edinburgh; and Grapes, from Miss Pollard, Edinburgh.

It was intimated that a spring show would be held about the end of April, 1925.

On Saturday, September 20, about fifty members of the Society visited Whittingehame, where they were conducted over the beautiful policies and garden by Mr. G. Anderson, the head gardener. The party were kindly entertained to tea at Whittinghame House by the Earl of Balfour and Miss Balfour, who gave them a hearty welcome, and on the motion of Mr. T. Gray, vice-president, in the absence of the president, a very hearty vote of thanks was accorded to the Earl of Balfour and Miss Balfour for their kindness.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

Mr. Chas. H. Curtis presided at the meeting, held at Westminster, on Monday, October 13. Fifteen new members were elected. Two members withdrew interest from their deposit accounts amounting to £6 19s. 6d., and two members over the age of seventy years withdrew £22 from their deposit accounts. The sick pay for the month on the ordinary side came to £50 6s. 8d., and on the State side to £54 15s. 6d.; maternity claim totalled £8.

The sum of £33 15s. 11d. was granted to eight members for dental, surgical and optical treatment; five other cases were considered. The Secretary reported arrangements for the Annual Dinner on Nov. 6, over which Lionel de Rothschild, Esq., O.B.E., will preside, supported by Lord Bessborough, Sir William Lawrence, G. Loder Esq., and many other well-known horticulturists. Tickets for the dinner have been taken up freely: further tickets may be obtained from the Secretary, 35, Alexandra Road, W.14., but application should be made as early as possible.

ROYAL HORTICULTURAL.

The following awards have been made to Dahlias by the Royal Horticultural Society, after trial at Wisley.

Awards of Merit.

(Single).—type A., *Little Jennie*, type B., *Nanno*, both sent by Messrs. W. Treseder, Ltd., Cardiff. (Paeony). — *The Rose*, sent by Messrs. Velthuys, Holland. (Small-flowered Paeony).—*Rosie*, sent by Messrs. J. Burrell and Co., Cambridge; *Rosie Supreme*, sent by J. Jarman and Co., Chard; *Sweet*, sent by Mr. A. J. Cobb, Reading; *Charmer*, *Norah Bell*, and *Gwynne*, all sent by Messrs. J. Burrell and Co. (Decorative).—*Polar Bear*, sent by Mr. E. Beckett, Elstree; *Emblem*, sent by Messrs. J. Burrell and Co (Small-flowered decorative).—*Carine*, and *Thursa*, both sent by Messrs. J. Burrell and Co. (Camellia).—*Nelly*, sent by Mr. H. Carlee, Holland. (Star).—*Haslemere Star* and *Hindhead Star*, both sent by Messrs. J. Cheal and Sons; *Reading Star*, sent by Mr. A. J. Cobb. (Cactus).

Joyce Goddard, sent by Messrs. Jarman and Co.; *Mrs. Forester Paton*, sent by Messrs. J. Cheal and Sons.

Highly Commended.

Mrs. M. Perry (Collarette), sent by Messrs. W. Treseder, Ltd.; Nutfield Priory (small-flowered Paeony), sent by Messrs. J. Cheal and Sons, Crawley; Vimy, (small-flowered Paeony) sent by Messrs. J. Cheal and Sons.

ROYAL SCOTTISH ARBORICULTURAL.

Aberdeen Branch.—The latest excursion of the members of this Society proved a red-letter day in the history of the branch. By the kind permission of His Majesty the King, the venue on this occasion was the magnificent forests on the Royal estate of Balmoral. Headed by Sir John Gladstone, Bt., of Fasque, Kincardineshire, the president of the branch, who was accompanied by Lord Glentanar, Aboyne; Lieut.-Colonel D. F. Davidson, of Dess; Mr. John Michie, M.V.O., at one time head forester on the Balmoral estate, and latterly Commissioner to His Majesty until his retiral; teachers from the forestry department of Aberdeen University, representatives of the Forestry Commission. the head foresters from leading estates within a radius of over 100 miles, nurserymen, seedsmen and timber merchants, the company made a brave show.

The day's itinerary proved intensely interesting, and, as Sir John Gladstone remarked at the close of the day's proceedings, the visitors had had a most enjoyable time and witnessed many beautiful and interesting things.

A fleet of motors conveyed the party through Ballochbuie, Garmaddie and Craiggowan forests on to Balmoral Castle, where the visit ended. The party passed through miles and miles of woodlands, halting now and then to examine specially interesting individual trees or areas of them, ranging in age from a few years to well on to 300 years. Time and again one heard the timber merchants exclaim, "grand sticks these," as they, with eyes quick to appraise their true value, passed among the magnificent specimens that met their view on every side. Major J. D. Ramsay, Commissioner to the King at Balmoral, met the party at the outset, and acted throughout the forenoon and afternoon as guide, philosopher and friend. Ballochbuie was the first forest visited, and the initial climb up to it proved too much for some of the motors until lightened of their loads, but all got there. Right in the heart of this wood were seen some magnificent specimens of Scots Fir, of an average age of 250 years. Clean-boled, tall and true, these contained cubic measurements that set the timber merchants furiously to think. One outstanding specimen, over 100 feet in height, showed no branch to sixty feet from the ground.

Lunch was served at Dantzig Shiel, a favourite shooting box of royalty, situated right in the centre of the forest. Here a meeting of the branch was held, presided over by Sir John Gladstone, and a number of new members, including Lord Glentanar, were enrolled. It was agreed that wooden houses should be discussed at the November meeting, opened by Mr. Donald Munro, O.B.E., Lord Glentanar invited the Society to inspect his woodlands around Aboyne (where the great forest fires took place a few years ago) some time next year. The downward journey was then begun through the eastern part of Ballochbuie and through Garmaddie. On the way a most interesting feature was the inspection of an area of Douglas Fir, which Mr. John Michie, M.V.O., planted while head forester to Queen Victoria forty years ago. It is planted on Craiggowan Hill, and Mr. G. F. Annand, of the Forestry Commission, Aberdeen, pointed out to the company that a plot of this wood was marked out and measured in June, 1921, when it was thirty-seven years old. At an altitude of 1,100 feet above sea level the ground was planted unevenly under Birch as nurses, and the Birch removed. The soil is sandy loam on gravel and boulders—morain over granite Mr. Michie termed it glacial drift very poor agriculturally. The volume of the plot was for the thirty-seven years 6,485 cubic feet, or about 146 cubic feet per acre per annum. For the last three years the yield had been, if anything, even greater. This is about double the best records given by German foresters for Coniferous timber. With much more to see and much more to admire the company reached Balmoral Castle, the beautiful amenities of which drew forth expressions of great admiration. Here Sir John Gladstone moved a vote of thanks to His Majesty for his great kindness in haviug them there. The vote was passed with three ringing cheers, and cheers having been given to the Commissioner, Major Ramsay, the party broke up, highly delighted with one of the most enjoyable excursions ever held under the auspices of the branch.

SOCIÉTÉ POMOLOGIQUE DE FRANCE.

The sixtieth meeting of the French Pomological Society took place on September 18 and 19 at the ancient town of Angers, famed for its fruits, flowers, and vineyards. The members assembled in the banqueting hall of the Town Hall, and M. Bernier, the Mayor, presided. M. Nomblot, of Bourg-la-Reine, was nominated President of the Congress, and the annual medal was awarded to M. Lécolier, nurseryman, of La Celle St. Cloud (Seine et Oise). There was a large attendance, and a number of subjects were discussed.

M. Lécolier read an interesting paper on the subject of the use in orchards, under certain circumstances, of horse and motor cultivators. The present tendency in French nurseries is to plant over a wide area, with large spaces between the trees, in order to enable mechanical cultivation to be substituted for hand labour.

M. Nomblot remarked that the use of mechanical and horse cultivation would probably increase; it was possible now to obtain motors which could be used for different kinds of cultivators.

Another paper by M. Lécolier was on the subject of the different crops which could be cultivated between the rows of trees in an orchard. Different plants would be suitable for different conditions, and could include in some cases flowers for cutting. He considered it would not be well to make use of plants which would require such deep cultivation as might damage the roots of the trees. In general, between-crops would be of most value the first year the trees were planted; after that, a well-established and well-cared-for orchard should be self-supporting. Fruit trees were frequently planted as between-crops in vineyards; the Peach was cultivated in this way in many districts.

M. Riviere read a paper, prepared in collaboration with M. Fromont, of Montreuil, on his experiences in the preservation of fruits. He stated that it was usually recommended to keep the air of the fruit store somewhat damp, as a too dry atmosphere tended to wither the fruits, and it had been found that the best results were obtained in an atmosphere almost saturated with damp. The temperature of the fruit room should be low; it was sufficient, in fact, merely to exclude frost, and to prevent sudden changes of temperature. It was unnecessary to aërate the store to rid the air of carbonic acid gas, as this retarded the ripening of the fruits.

M. Passy remarked that the Apple Reinette du Canada was preferred with a withered skin, as it was found to be sweeter when in that condition, but he agreed that the great majority of Apples and Pears lost in value when they were dried.

On the question of the manuring of fruit trees, the Congress sanctioned the sparing use of artificial fertilisers, but not in such quantities as to produce immoderate vegetation to the detriment of the fruiting qualities.

The Cherry Précoce de la Marché, a favourite variety in the south of France, was placed on the Society's list of recommended varieties. The following were struck off the list:—Peaches Commandant Bossu, Commandant Didier, Colonel Duseval; Nectarine Camille Maheut; Cherry Bigarreau Emery; Pears Baronne Leroy, Beurré Henry Courcelles, Madame Chervé, President Heron, Souvenir de Guy Bruzon; Apples Bébé Rose and Reinette de Greez Doiceau; and Grape Madame Gererd.

A grand banquet in the Town Hall and some interesting excursions to the principal nurseries and seed-growing establishments in the neighbourhood, as well as a visit to the vineyards and caves of Saumur brought to a close this successful event. *A. M.*

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, October 3.—Committee present: The Rev. J. Crombleholme (in the Chair), Messrs. R. Ashworth, A. Burns, A. Coningsby, D. A. Cowan, J. Cypher, J. Evans, Capt. Wm. Horridge, J. Howes, E. W. Thompson, and H. Arthur (Secretary).

First-Class Certificates.

Odontoglossum crispum Enchantress. — A variety of perfect shape with very broad, white sepals and petals, and a chestnut-brown blotch on the sepals and lip. From S. Gratrix, Esq.

Laelio-Cattleya Hassallii alba (*L.-C. Britannia alba* × *F. M. Beyrodt*. — A flower with white sepals and petals and a very richly-coloured lip. From P. Smith, Esq.

Awards of Merit.

Cattleya Iris, Haddon Belle; Cypripedium Golden Wings (*Mrs. F. Sander* × *Golden Morn*). From P. Smith, Esq.

Cypripedium Valkyrie (*Earl Tankerville* × *Æson giganteum*). From S. Gratrix, Esq.

Odontoglossum Krameri album. From Messrs. Keeling and Son.

Groups.

Mrs. Bruce and Miss Wrigley, Bury (gr. Mr. A. Burns) staged Odontoglossums in variety and were awarded a large Silver Medal, a special Cultural Award being recommended to the gardener.

A large Silver Medal was awarded to Messrs. J. Cypher and Sons, Cheltenham, for a miscellaneous group of Orchids.

In our report of the meeting of this Society on September 19 (see p. 242) omission was made of Odontoglossum King Henry VIII., which was exhibited by Mrs. Gratrix, and awarded a large Silver Medal.

——Friday, October 17.—Committee present: R. Ashworth, Esq. (in the Chair), Messrs. A. Burns, A. Coningsby, J. Cypher, G. Giles, E. W. Thompson, and H. Arthur (Secretary).

First Class Certificates.

Cypripedium Joseph Thrower (*Germain Opoix* × *Leeanum Clinkaberryanum*. — A very fine flower, being a glorified Germain Opoix with a large, round dorsal sepal over three inches across, and a white margin. From P. **Smith**, Esq.

Odontoglossum Grande, Hey House Variety.—A large, well-set flower with broad, flat petals that are evenly marked with chocolate-maroon, and a large, round lip. From J. **McCartney**, Esq.

AWARDS OF MERIT.

Cattleya Blushing Bride (*C. speciosissima Stanleyi* × *C. Mendelii alba*). From S **Gratrix**, Esq.

Cattleya Enid alba, var. The Bride. From P. **Smith**, Esq.

GROUPS.

Mrs. **Bruce** and Miss **Wrigley**, Bury (gr. Mr. A. Burns) were awarded a Gold Medal for a group of Orchids.

A large Silver Medal was awarded to A. **Hanmer**, Esq., Buxton (gr. Mr. G. Giles) for a miscellaneous group.

Messrs. J. **Cypher and Sons**, Cheltenham, staged a group for which a large Silver Medal was awarded.

NATIONAL SWEET PEA.

There was a good average attendance at the Annuai General Meeting of the National Sweet Pea Society, held at Essex Hall, Essex Street, London, on October 21, under the chairmanship of Mr. Andrew Ireland.

The Report and Balance Sheet, which had been printed and circulated and was taken as read, showed a vastly improved state of affairs. Last year, owing to a variety of causes, the income of the Society was insufficient to meet its expenditure—always a very undesirable condition—but the present statement shows a surplus for the year of £12 0s. 1d., and as the Secretary informs us that since the balance sheet was drawn up a considerable sum, which belongs to the Society's year now ended, has been received, the Committee of Management and the Secretary are to be congratulated on the success which has attended their great efforts during the past year. On the expenditure side we are pleased to note that a liberal sum has been allowed for depreciation of the stock of show stands and vases. It must have been tempting to retain the previous valuation, especially as so doing would have more than doubled the year's surplus, but it was a wise and business-like step to "mark them down," and the effect must be increased confidence in the members in the Committee.

During the year one hundred and ten members and eleven kindred societies have joined the National Sweet Pea Society, and we learn that this is the largest increase during the present decade.

The Henry Eckford Memorial Medal, which was instituted to commemorate the great services of the late Mr. Henry Eckford and is annually awarded to some one who has done good work for the Sweet Pea, was unanimously awarded to Mr. **Thomas Jones**, Bryn Penylan, Ruabon. Mr. Jones is an amateur who has devoted his spare time over a long period to the Sweet Pea in many ways, and he was the pioneer of the present method of growing exhibition blooms. The meeting learnt, with the deepest regret, that Mr. Jones's health was causing his relatives great anxiety, and a letter of sympathy was sent him.

After the unanimous adoption of the Committee's Report and the balance sheet, the chief interest of the meeting centred in the proposed alteration of some of the rules governing the Floral Committee. Various letters, for and against the alterations, including an admirable one from Mr. Norman Lambert, were read and Mr. Horace J. Wright "stated his case" in a clear and well-ordered manner. Many members expressed their views. There seemed to be a decided misapprehension concerning the secrecy of the Novelty Trials, but it was made quite clear that no one present at the judging of the novelties had the slightest knowledge of the identity of the senders, and it was also pointed out that on occasions members of the Floral Committee, had voted against their own varieties, and also that after the voting, votes recorded by those sending the novelties judged, were struck out.

On being put to the vote, the first three proposed alterations were lost, and in place of the proposed alteration to rule ten an amendment to the effect that of the nine members of the Floral Committee five, including the chairman, shall be amateurs, and four shall be traders, was carried. The members of the Floral Committee elected under this rule are:—(Amateurs) Messrs. R. W. Ascroft, E. H. Christy, C. H. Curtis, R. F. Felton, and A. E. Usher; (Trade) Messrs. R. Bolton, A. Ireland, J. Ness, and J. Stevenson.

The eligible members of the General Committee, with Messrs. E. H. Cox, A. Ireland, G. Ireland, and F. Stratford, in place of Messrs. S. Horton, Chas. Unwin, W. J. Unwin, and W. J. Wellicome, were re-elected, as also were the Hon. Auditors, Messrs. George Cobley, Kay and Company; the Hon. Treasurer, Mr. J. M. Bridgeford; and the Secretary, Mr. A. C. Bartlett.

The President for the Society's new year is Mr. Edward Sherwood, of Messrs. Hurst and Son, who, until last year, when he resigned on account of pressure of business affairs, was for many years Hon. Treasurer of the Society. Mr. H. A. Perkin is the new Chairman of the Committee.

IMPERIAL FRUIT SHOW.

The Imperial Fruit Show which opened at Birmingham on October 24 and continued till November 1, proved to be, from the growers' point of view, a great success. The Bingley Hall, in which the show was held, has been the venue of many horticultural exhibitions, but it is safe to say that it has never contained such an extensive display of Apples as were to be seen there during the past week. Exhibits came from far distant parts of the Empire, including Canada, Ontario, Rhodesia, Australia, New Zealand, British Columbia, West Indies, South Africa, and the British Isles.

The main avenues in the great hall, which covers a floor space of between 60,000 and 70,000 square feet, were occupied by many competitive exhibits of Apples and Oranges, together with miscellaneous trade exhibits of fruits, many of the latter being displayed in very ornamental erections. The sides of the hall were devoted to exhibits of horticultural and miscellaneous appliances, whilst educational exhibits by the Ministry of Agriculture and Fisheries, The East Malling and Long Ashton Research Stations, together with exhibits of Pears, Cider Apples, and Tomatos were accommodated in the galleries.

The long, narrow hall on the south side of the building in which the major portion of the exhibits was housed, was used for the sieve, bushel and barrel classes of Apples from the Kent and Southern Counties, Eastern and Northern Counties, and the West and Midlands sections. All the box exhibits were displayed on sloping staging, which gave interested visitors an opportunity of inspecting the specimens in comfort, besides adding to the effectiveness of the show which was formally opened by the Lord Mayor of Birmingham, supported by Mr. W. G. Lobjoit (Controller of Horticulture), Sir Francis Flood (Secretary to the Ministry of Agriculture), Mr. George Swift and Mr. F. L. Gable, a representative of the Canadian Government. The expense of organising a show of such magnitude is very heavy, and the Committee is fortunate in having a guarantee fund of over £5,000. The schedule of prizes was divided into twelve sections and included upwards of one hundred classes.

Of the sixteen classes in the Kent and Southern Counties' section, Mr. S. W. **Mount**, Patrixbourne, Canterbury, won first prizes for seven boxes each of (1), Worcester Pearmain, splendidly coloured; (2), Allington Pippin; (3), Bramley's Seedling, with heavy, bright-cheeked fruits; (4), Newton Wonder, very big; (5), Lord Derby; and (6), Lane's Prince Albert, superbly coloured. He was also successful in the classes for six half-barrels each of Bramley's Seedling, Newton Wonder, Lane's Prince Albert, and for seven bushels of Bramley's Seedling and for any other variety. Mr. H. M. **Cobb**, Higham, Rochester, had the best seven bushels of Newton Wonder.

Mr. S. W. **Mount** won the Challenge Cup presented by Messrs. Coupe and Sons for the best exhibits of Newton Wonder and Lane's Prince Albert, as well as Messrs. Clarke Brothers Challenge Cup for seven half barrels of Bramley's Seedling; the Messrs. T. J. Poupart's Challenge Cup for eight boxes of Worcester Pearmain; the Challenge Cup presented by Messrs. John Gilroy and Sons for eight boxes of Allington Pippin; Messrs. Coupe and Son's Challenge Cup for Bramley's Seedling and Newton Wonder; Plate value ten guineas presented by Messrs. Abol, Ltd., for the best exhibit in the Kent and Southern Counties, and the Champion Cup, value ten guineas, offered by Messrs. McDougall and Yalding for culinary Apples.

In the Eastern and Northern Counties Section, the leading eight boxes of Cox's Orange Pippin came from Messrs. W. **Seabrook and Sons**, Chelmsford, who also had the winning exhibit of Allington Pippin, showing very fine fruit. **Col. Petre**, Norwich, excelled with Worcester Pearmain and **The Hollesley Bay Labour Colony**, Suffolk, contributed the winning seven bushels each of Newton Wonder and Lane's Prince Albert. Mrs. J. C. **Blofield**, Wroxham, Norfolk, excelled with Bramley's Seedling and Lord Derby. **The Hollesley Bay Labour Colony** also won first prizes for eight half-sieves of Cox's Orange Pippin; seven half-barrels each of Bramley's Seedling and Lane's Prince Albert; and seven bushels of Bramley's Seedling. Mr. **Wm. P. Hartley**, Hitchin, showed the best seven half-barrels of Newton Wonder.

The thirty-guineas Challenge Cup presented by Messrs. Clarke Brothers for six bushels of cooking Apples, was won by **The Hollesley Bay Labour Colony**, and the same competitors also won Messrs. McDougall and Yalding's Challenge Cup, value fifteen guineas, for six barrels of Cooking Apples; a Rose bowl, offered by the same donors, for eight half-sieves of Cox's Orange Pippin, and a piece of Plate, given by Messrs. Abol, Ltd. for the best exhibit from the Cambridge district. A silver Salver, presented by the Strawson Chemical Co. for six boxes of dessert Apples, was deservedly won by Messrs. W. **Seabrook and Sons.**

In the West and Midlands Section the first prizes for eight boxes each of Worcester Pearmain, Allington Pippin, Bramley's Seedling and Lane's Prince Albert were gained by Mr. B. J. **Harding**, Kilcot, Newant, Gloucestershire, who showed very fine fruits. Mr. B. **Norris Bomford**, Salford Priors, Evesham, excelled with capital fruits of Blenheim Pippin. Mr. F. P. **Norbury**, Sherridge, Malvern, won the first prize for beautifully coloured Newton Wonder, and Messrs. B. **Bomford and** Co., Evesham, were deservedly awarded first prize for large specimens of Lord Derby. Mr. B. J. **Harding** led in classes for eight half-sieves of dessert Apples; for seven half-barrels of Bramley's Seedling, and in another for seven bushels of the last-named variety. All the fruits were large and of first-rate quality. Messrs. **Bateman Brothers**, Bidford-on-Avon, showed the best seven half-barrels of Newton Wonder. The principal exhibit in the class for seven bushels of Newton Wonder was shown by Mr. B. Norris Bomford. The Eardiston Farming Co., Stockton, Worcester, showed the best seven bushels of any other variety not provided for in the schedule.

The Nicholls Challenge Cup, value £100, offered for the two best exhibits of Apples—one culinary and the other dessert—by the same exhibitor, was won by Mr. B. J. Harding, who also secured the Champion Cup presented by Messrs. McDougall and Yalding, as well as Messrs. W. I. Craven and Co.'s ten guinea Challenge Cup, offered for the best exhibit of Worcester Pearmain. Messrs. B. Bomford and Co. secured Messrs. Clarke Brothers' Challenge Cup for culinary and dessert Apples, and Mr. J. N. Bennett, Westbury-on-Severn, won the Rt. Hon. Lord Blendisloe's £30 Challenge Cup, offered to the exhibitor securing the highest number of points for Apples grown in thè county of Gloucestershire. A crystal Rose bowl, presented by Messrs. Muirhead and Maxwell for Cox's Orange Pippin, was won by Mr. J. Morton, Newent.

The four classes in the glasshouse section were reserved for commercial growers in the United Kingdom and Channel Islands. Messrs. Douglas Brothers, Durrington, Worthing, were awarded the first prize of £5, together with a Gold Medal, the latter presented by the proprietors of *The Fruit Grower* for four 12-lb. baskets of black Grapes. Mr. C. H. Shoults, Hoddesdon, was first in the class for eight 12-lb. boxes of Tomatos.

In the small growers' section, open to growers in the United Kingdom with not more than five acres of fruit, excluding Strawberries, Mr. C. W. Powell, Warham, Hereford, won first prize for two boxes of dessert Apples, and Mr. C. Hodges, Boreley, Ombersley, took the lead in the classes for two boxes of culinary Apples and two half-barrels of culinary Apples.

The United Kingdom section contained some remarkably good Apples, large and well coloured. In the class for eight boxes of Cox's Orange Pippin, Messrs. W. Seabrook and Sons led with beautiful fruit, followed by The Hollesley Bay Labour Colony. Mr. S. W. Mount won first prizes for seven boxes of Worcester Pearmain, splendidly coloured; seven boxes of Newton Wonder, with very heavy fruit; seven boxes of Lord Derby; seven half-barrels of Newton Wonder; seven half-barrels of Lane's Prince Albert, particularly good; and for seven bushels also of the last named variety. From Mr. J. B. Harding came the winning exhibits of eight boxes of Allington Pippin; seven boxes of Bramley's Seedling; seven half-barrels of Bramley's Seedling; and seven boxes of Lane's Prince Albert.

Mr. B. Bomford showed the best eight boxes of Blenheim Pippin, and The Hollesley Bay Labour Colony had the leading ten half-sieves of Cox's Orange Pippin in a similar class for any variety not specified.

The premier set of six boxes of Conference Pears was shown by Mr. B. Bomford, whilst Mr. G. D. Laurens, Jersey, won first prize for six boxes of Doyenné du Comice.

Mr. Walter Eggleton, Wisbech, was awarded first prize in a class for any other dessert variety, and Mr. F. Ivo Neame, Chilham, Kent, had the best four boxes of cooking Pears. The fruit shown in the classes devoted to Pears were uncommonly good. Two Gold Medals offered by the R.H.S. for Conference and Doyenné du Comice Pears were won by Mr. B. Bomford and Mr. G. D. Laurens respectively.

Mr. S. W. Mount carried off the two Gold Medals presented by *The Fruit Grower* for dessert Apples and culinary Apples; also the Gold Cup value 50 guineas presented by Mr. C. H. Deakin, and the Silver Challenge Cup presented by the London Fruit, Flower, and Vegetable Markets Association for the best exhibit of Bramley's Seedling, and the Silver-Gilt Medal of the Worshipful Company of Fruiterers' for culinary Apples. Messrs. Dingley's, Ltd., Gold Cup for dessert fruit was won by The Hollesley Bay Labour Colony, who also secured the Silver Challenge Cup of the London Fruit, Flower and Vegetable Markets Association for ten half-sieves of dessert Apples.

The sixteen classes in the overseas section made a splendid show. Eight boxes of each variety were required. The Associated Growers of British Columbia, Ltd., Vernon, B.C., were awarded first prizes for the following varieties, *i.e.*, Wealthy, Snow, McIntosh (extraordinarily well coloured), Jonathan, Cox's Orange Pippin, Spitzenberg, Newtown Pippin, Wagner, King, Spy, Greening, and another variety. The United Fruit Co. of Nova Scotia, Kentville, were successful in the Golden Russet, Stark and Baldwin classes. The Fruit Growers' Association of Ontario, Toronto, gained second prize in the classes for Wealthy, Snow, and King of the Pippins.

The United Fruit Companies of Nova Scotia, secured Messrs. J. and H. Goodwin's prize of £10 10s. for the best exhibit packed by any Co-operative Society in Nova Scotia. The Associated Growers of British Columbia won a similar prize also offered by the same donors for the best exhibit packed by any Co-operative Society in British Columbia, as well as £10 offered by Messrs. T. J. Poupart for the best British Columbia exhibit. The last named donors also offered the same amount for the best exhibits from Nova Scotia and Toronto, and these were won by The United Fruit Co. and The Fruit Growers' Association of Toronto respectively.

In the British Columbia section the Associated Growers of British Columbia were awarded first prizes in classes for eight boxes of each of the following varieties, viz., Wealthy, McIntosh, Jonathan, Cox's Orange Pippin, Spitzenberg, Newton Pippin and Wagner. These classes were much admired, the fruits being large and beautifully coloured, especially McIntosh.

All the varieties in the Ontario, Quebec and New Brunswick section appeared in the previous one. The Fruit Growers' Association of Ontario won five first prizes and Mr. E. Bruce Chaplin, Quebec, secured the remaining one.

In the Nova Scotia section the first prizes for eight boxes of each of the following varieties, viz., Cox's Orange Pippin and Spy, were awarded to the Buchanan Fruit Co., Waterville, Nova Scotia, and in classes for King, Golden Russet and Stark, the honours were gained by the United Fruit Co. of Nova Scotia.

A Gold Medal and £20 offered as first prize in the British Empire Section for twelve boxes of Dessert Apples was won by the Associated Growers of British Columbia with McIntosh, the richest coloured Apple in the show. The second prize was awarded to Kelowna Growers' Exchange, Kelowna, with Cox's Orange Pippin, and the third to The Hollesley Bay Labour Colony with Allington Pippin. There was very strong competition in the class for twelve boxes of cooking Apples, the Associated Growers of British Columbia leading with North Western Greening. The same company also won the Silver Challenge Cup, value £50, presented by Mr. George Swift, together with £10 offered by Messrs. Glover, Hill and Co.; second, Mr. S. W. Mount. The best non-returnable packages suitable for sending Apples to market came from Messrs. George Monro, Ltd., Covent Garden.

Oranges were a feature of the show. In a class for seven boxes of Navel Oranges, Mr. E. G. Wood was placed first and in the class for late Valencia Oranges Sir Llewellyn Anderrson, Transvaal, was the most successful competitor.

Trade groups were numerous and good. Messrs. W. Seabrook and Sons, Chelmsford, staged fine Rev. W. Wilks, Charles Ross, King of the Pippins, Bismarck and Worcester Pearmain Apples. Messrs. Laxton Brothers, Bedford, made a feature of their Lord Lambourne Apple, which was shown in splendid condition.

Messrs. Daniel Brothers, Norwich, sent Apples and Pears. From His Majesty The King, Windsor, came Apples, Pears, Crabs and Medlars.

Messrs. Reamsbottom and Co, West Drayton, had a table of the bright-flowered St. Brigid Anemones. The Studley College, Warwickshire, had a nice corner stand of Grapes and hardy fruit.

Messrs. Bunyard and Co., Maidstone, contributed Apples and Pears. Messrs. Gunn and Sons, Olton, showed Roses and Lupins.

Messrs. George Monro, Ltd., Covent Garden had a big stand of beautifully arranged home grown and overseas fruit, and Mr. John Swift, Manchester, showed a handsome lot of Apples and Pears.

Messrs. George Jackson and Co., Birmingham, showed miscellaneous fruit, and Messrs. J. and H. Goodwin, Manchester, had an attractive display of Apples and Oranges. A choice collection of fruit was staged by Messrs. Francis Nicholls, Ltd., Birmingham. Exhibits were also received from Messrs. Gerald Da Costa, The Federation of British Growers, The Evesham and District Market Gardeners' and Fruit Growers' Association, and many others.

AYRSHIRE AGRICULTURAL.

Apart from the exhibits of cheese and butter, which are the prominent features of the Ayrshire Autumn Show, there was a splendid display of vegetables and fruit in which Potatos, Carrots and Leeks were prominent in the former section and Apples in the latter.

The principal awards were as follow:—Silver Medal for the best dish of Potatos, Mr. William Broadfoot, Jr., Brydstone, Beith; the best twenty-five varieties, first, Messrs. A. and A. Reid, High Williamshard, Stowarton; second, Mr. Jas. R. Tennant, Tour Gardens Farm, Kilmaurs. Messrs. Reid were also successful in the classes for twelve and nine varieties and for six tubers of any coloured kidney variety. They also obtained four second prizes, indeed there were only three classes in which their name did not appear in the prize list. Mr. Broadfoot was their chief opponent and his premier awards were obtained in the classes for six, four (two round and two kidney), six white round, and six white kidney varieties respectively. The prize for six varieties, restricted to exhibitors who had never won a money prize in the Potato competition, was awarded to Mr. James Colthart, Auchans Lodge, Drybridge.

Messrs. Samson Ltd., Kilmarnock, put up a fine decorative collection of Liliums, Roses, Ferns, Dahlias and Chrysanthemums.

NATIONAL CHRYSANTHEMUM.

A meeting of the National Chrysanthemum Society's Floral Committee was held at the Royal Horticultural Hall, on Monday, October 20. The following awards were made to Chrysanthemums:—

First Class Certificates.

Miss Dorothy Wilson.—A large-flowered incurved variety of great beauty and considerable substance, and likely to become extremely popular for market use. The colour is bright, rich yellow. Shown by Mr. W. Roots, Cranford.

H. Fox Wilson.—A large-flowered single variety, having three or four rows of florets. The blooms are very effective, and their shade of orange-amber is very pleasing.

White Model.—A beautiful pure white, large-flowered single variety, with graceful blooms borne on good stems. These two varieties were shown by Mr. George Carpenter, West Hall Gardens, Byfleet.

Julian.—A particularly handsome, large-flowered Japanese variety of rich rosy-bronze colouring and peculiarly graceful form. It is a sport from Mrs. B. Carpenter. Shown by Messrs. Keith Luxford and Co.

BRITISH FLORISTS' FEDERATION.

The British Florists' Federation's Market Floral Committee met in Messrs. Monro's salerooms on Monday, October 20, at noon. Mr. W. E. Wallace presided, and Mr. R. Miller, a florist from Neutra, was present as a visitor.

The Committee granted a Provisional First Class Certificate to *Chrysanthemum Gloriosa*, shown by Mr. H. Shoesmith, Woodbridge Nursery, Guildford. This is a reflexed, Japanese variety of good size and pretty, rich, golden-bronze colouring. One of the plants shown carried no fewer than thirteen good blooms on long stems.

READING AND DISTRICT GARDENERS'.

The usual fortnightly meeting of this Society was held in the Recreation Club Room, Abbey Hall, when the President, Mr. Councillor Frank E. Moring, presided over a large attendance of the members. The subject for discussion was "Soils, pots, potting and repotting," and this was introduced by Mr. F. J. Green, of Aldermaston Court Gardens, who gave a most instructive discourse, especially valuable to the younger members. In his opening remarks he referred to the ingredients required for a good compost and gave the proper proportions suitable for various stove and greenhouse plants.

In the competition for three vases of Chrysanthemums in sprays, there were six entries, and the first prize was awarded to Mr. J. Wynn, Hammonds Gardens, Checkendon. Mr. E. A. Beaumont, Copse House Gardens, Earley, was second, and Mr. H. Wynn, Quern's House Gardens, Goring Heath, was third. In the non-competitive section Awards of Merit were gained by Mr. E. A. Beaumont for four vases of Chrysanthemums, and by Messrs. E. and H. Hooper for three vases of Roses from stocks budded in July. Brussels Sprouts were exhibited by Mr. H. C. Wade, Abbotsfield Gardens, Goring Heath, Sweet Peas by Mr. F. Alexander, Kennetts' Lodge Gardens, Theale, and Chrysanthemum Mr. Lloyd George, by Mr. E. Cooper.

GARDENING APPOINTMENTS.

Mr. F. W. Cable, for the past six years in business on his own account, as Gardener to P. C. Vesley, Esq., Easton Park, Wickham Market, Suffolk.

Mr. T. O. Grinham, previously Gardener for fourteen years at Taplow Priory, Buckinghamshire, and for the past ten years with Percy Noble, Esq., as Gardener to Douglas W. Stobart, Esq., Woodlands, Shiplake, Oxford.

Mr. W. G. Osborne, for the past two years Gardener to C. W. Ansdell, Esq., Leckford Abbess, Stockbridge, as Gardener to Lt.-Col. M. R. T. Courage, Sutton Manor, Sutton Scotney, Hampshire. (Thanks for 2s. for R.G.O.F. Box.—Eds.).

Mr. J. Peplow, previously for eight years Gardener to the late Lord Willoughby de Broke, at Compton Verney, Warwick, as gardener to the Rt. Hon. Viscount Ednam, Himley Hall, Himley, near Dudley, Staffordshire. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.)

Mr. A. E. Sutton, previously Gardener at Byram Hall, Ferrybridge, Yorkshire, as Gardener to R. J. Streatfield, Esq., Rossington Hall, Bawtry, Yorkshire.

Mr. N. Wells, for five years gardener to Mrs. A. Cator, Landguard Manor, Shanklin, as gardener to Colonel Willard, West Hill, Shanklin, Isle of Wight. (Thanks for 2s. for R.G.O.F. Box.—Eds.).

Mr. D. Wilmshurst, as Gardener to Lord Dalmeny at Mentmore, Leighton Buzzard, Bedfordshire. (Thanks for 5/- for R.G.O.F. Box.—Eds.).

Mr. S. A. Young, previously for three years at Mattersey Hall, Doncaster, and Foreman at Chatsworth, as Gardener to Capt. Lindsay Everard, Ratcliffe Hall, Leicestershire.

ANSWERS TO CORRESPONDENTS.

Books on Roses: *Reader.* Two useful books for your purpose are *Roses: their History, Development and Cultivation*, by the Rev. J. H. Pemberton, and *Roses and their Cultivation*, by T. W. Sanders. These may be obtained from our Publishing Department, price, 8/- each, post free.

Chrysanthemums Diseased: *C. B.* The Chrysanthemums are affected with the rust fungus Puccinia Chrysanthemi, but we are also of the opinion that the trouble is not solely due to this disease as an inefficient root action may be the cause of the lower leaves shrivelling. The disease is carried from season to season by means of cuttings from old stock plants, and it is important to propagate from healthy plants. The disease may be kept in check by dusting the plants with flowers of sulphur.

Climbers for Back Wall of Conservatory: *R. B.* The house you describe should be quite suitable for the successful cultivation and display of a variety of plants You do not state what temperature is to be maintained, but we assume from your remarks that it will be an average greenhouse temperature, say 45° to 50° by night during the winter months, although even 40° to 45° would suffice for a large variety of plants. When choosing plants for a wall, it is usually best to select those that require to be tied to wires or trellis work; true climbers or twining plants being best suited for training to rafters. Twining plants could be trained to the trellis, along under the apex of the roof, and then allowed to hang in a graceful fashion. For this purpose Solanum Wendlandii, Tacsonia Van Volxemii, Passiflora caerulea and its white variety Constance Elliott, might be used, as well as Mandevilla suaveolens. To cover the wall, such plants as Plumbago capensis, blue and white varieties, are very suitable, as also are Cestrum elegans, C. Newellii, and C. aurantiacum; Begonia fuchsioides, Heliotrope, Acacia leprosa and A. riceana, Asparagus plumosus, Lantana salvifolia (syn. delicatissima), Jasminum grandiflorum, Tibouchina semi-decandra (syn. Pleroma elegans), Cassia corymbosa, and Clianthus pumiceus. Streptosolen Jamesonii is also very beautiful, but should be exposed to full sun. Cuculia gratissima should also do well in such a position. All the plants mentioned will succeed if planted in a well-drained border with their roots in good potting compost. Rhodochiton volubile is a beautiful annual climber, but where it can be planted out it is at its best during the second year. Hibbertia dentata is also very beautiful, but personal taste and experience must to a certain extent determine the various plants to be grown.

Cordon Dessert Apples: *A. D. W.* Most of the leading nurserymen who specialise in the cultivation of fruit trees, list the varieties of Apples mentioned in your letter, *i.e.*, Hitchin Pippin, Madresfield Court, and Queen Mary. The two last named were introduced by Mr. E. Parsons, Barbourne Nurseries, Worcester. Well selected "Nonesuch" Paradise stocks are suitable for cordon Apples, although many nurserymen are now using one of the forms selected by the East Malling Research Station.

Flamboyante: *F. A. R.* The pod is that of Poinceana regia, which is, as you state, commonly known as Flamboyante. The tree is a native of Madagascar, and requires the temperature of a stove house in this country. Its cultivation is similar to that accorded Caesalpinia.

Names of Plants: *J. F. D.* We are unable to identify the variety of Lavender; send when in flower. *Robin Hood.* The Rose may be American Pillar, but the pressed flower seems to be darker in colour than is usual in that variety. Your best plan would be to send flowers to a nurseryman who specialises in Roses. *G. S., Elgin.* Agave americana variegata. *G. A.* Cydonia japonica. *M. M.* 1, Spiraea Aitchisonii; 2, Robinia hispida; 3, Catalpa bignonioides; 4, Populus alba; 5, Pyrus Aucuparia; 6, Cotoneaster frigida. *Thorpe.* We cannot undertake to name florists' flowers. *W. S.* 1, Cupressus Lawsoniana, var. densa; 2, Cryptomeria japonica, var. elegans; 3, Picea Morinda; 4, Athrotaxis selaginoides; 5, Juniperus chinensis; 6, Cupressus pisifera, var. squarrosa; 7, Sciadopitys verticillata; 8, Cephalotaxus pedunculata; 9, C. Fortunei; 10, Escallonia illinita; 11, Berberis Aquifolium; 12, Magnolia tripetala; 13, Skimmia japonica; 14, Aucuba japonica, var. limbata; 15, Pieris japonica; 16, Olearia Haastii; 17, Ilex cornuta; 18, Sedum latifolium; 19, Cassinia fulvida; 20, Skimmia Laureola; 21, Platanus orientalis; 22, Cryptomeria japonica; 23, Prumnopitys elegans. *J. C.* Pinus excelsa.

Road Sweepings: *G. C.* We do not think that after a period of twelve years the road sweepings would be unfit for use in the garden. The unsatisfactory condition of the Roses may have been due to other causes, and it would be necessary to examine an unhealthy bush before an opinion could be formed of the true nature of the trouble.

Rose Rust: *H. W.* This disease is very common in cultivated Roses. The diseased leaves should not be allowed to remain on the ground during winter, but should be gathered up and burned. At pruning time the shoots should also be similarly disposed of and the plants sprayed with Bordeaux mixture directly the buds begin to burst. The spraying should be repeated at monthly intervals.

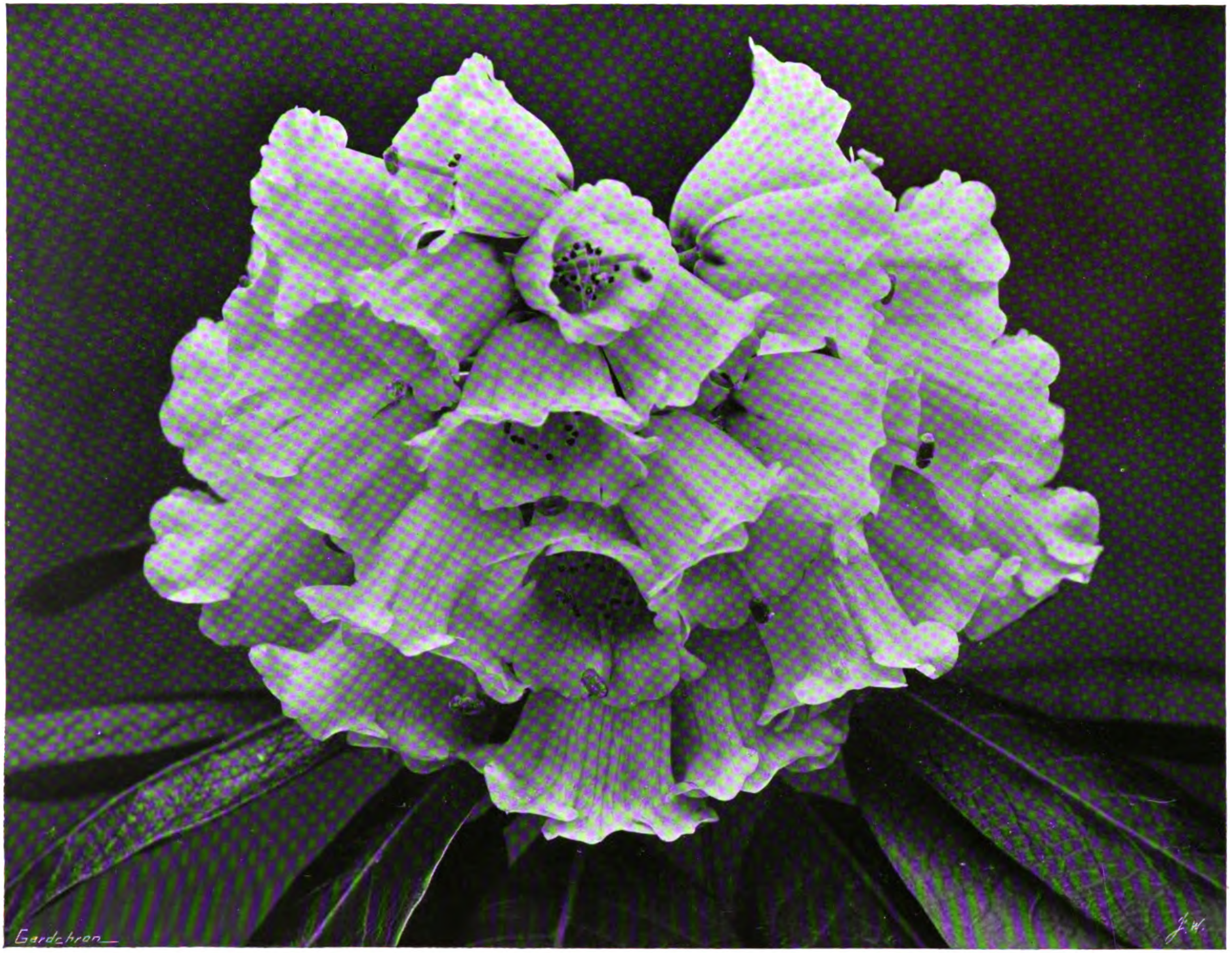
Shrubs and Climbers for a Hot, Dry Clay Bank: *V. F. P. D.* Cistus cyprius, C. laurifolius, C. Loretii, and C. corbariensis are suitable if old mortar rubble is worked into the soil previous to planting. Double Gorse, Hypericum calycinum, the Double White and Double Pink Brambles—Rubus ulmifolius fl. pl. and R. thyrsoideus fl. pl., Genista hispanica, Spartium junceum, Cytisus scoparius, and Helianthemum formosum, are all desirable. If the front of the bank can be cultivated plant the numerous coloured varieties of Helianthemum vulgare among stones usually employed in rockeries.

Souchet or Chufa: *W. P.* The plant to which you refer is Cyperus esculentus, which yields tubers and is known in France as *Souchet comestible* or *Amande de terre.* According to Lindley in his book *The Vegetable Kingdom*, the tubers are used as food in the south of Europe, and that when roasted they have been proposed as a substitute for Coffee and Cocoa. Another species C. bulbosus produces tubers which, when boiled or roasted, have a flavour resembling Potatos, and would be valuable for food were they not so small.

Woodlice in Greenhouse: *J. T.* Woodlice may be readily trapped in the greenhouse by placing a scooped-out Beetroot or Potato near their haunts. Another good trap consists of a flower pot, partly filled with moist Moss or stale hay, placed on its side and half buried in the soil. The trap should be examined every day and the pests shaken into a pail of boiling water.

Communications Received.—A. W.—J. A. S.—J. W. B.—D. C. W.—G. K. S.—A. J. B.—J. M.—A. H. W.—Chas. (Thanks for 2s. 6d. for R.G.O.F. Box)—J. A. H.—M, M.—M. and Co.

Supplement to The GARDENERS' CHRONICLE.


Gardchron
J.W.

RHODODENDRON FALCONERI.

THE
Gardeners' Chronicle

No. 1976—*SATURDAY, NOVEMBER* 8, 1924.

CONTENTS.

Alpine garden—
  A few choice rock plants 317
Barley seed, interesting experiments with Mount Everest ... 311
Books, notices of—
  Hardy Bulbs for Amateurs 322
Florists' flowers—
  Chrysanthemum Mabel Weston 315
  The Decorative Dahlia 315
Fruit crops, remarks on the condition of the 322
Garden Craft in the Canticles 318
"Gardeners' Chronicle" seventy-five years ago 313
Gardeners' Royal Benevolent Institution's Festival Dinner ... 311
Hardy flower border 316
Hardy fruit garden—
  An old-fashioned dessert Apple 323
  Fruits suitable for planting in a north aspect 323
Hydrangeas, blue ... 312
Indoor plants—
  Pleroma macranthum 313
Liliums from seeds in Ontario... 320
Obituary—
  Inglis, Alexander ... 326
  Taylor, Alfred ... 326
Orchid notes and gleanings—
  Cattleya Orient ... 319
  Laelio-Cattleya Epic 319
  Orchids at Knightsbridge 319
Plants new or noteworthy—
  Brunsvigia Josephinae 313
Plum from Russia, a new 312
Potatos dearer 312
Rhododendrons 320
Rose garden, the—
  Rose Lady F. Stronge 319
  Rose Red Premier ... 319
Rose trials at Bagatelle, International 312
Roses transplanted by air from Europe to America 312
Shrubs at Ottawa, hardy 311
Societies—
  Royal Horticultural 324
Trees and Shrubs ... 316
Vegetable garden—
  Mange-Tout 323
Vienna Horticultural Exhibition 312
Vine, the Fontainebleau 312
Week's work, the ... 314
Wisley, notes from ... 316
Woodlands, the development of estate ... 311

ILLUSTRATIONS.

Brunsvigia Josephinae flowering in the open at Cambridge Botanic Gardens 313
Chrysanthemum Mabel Weston 315
Jeffery, Mr. J., portrait of 312
Lewisia Howellii 317
Lilium longiflorum formosum, 320; L. tigrinum ... 321
Rose Lady F. Stronge 319

SUPPLEMENTARY PLATE.
Rhododendron Falconeri.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 43·0.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday November 5, 10 a.m.: Bar. 30.3; temp. 45°. Weather, slight fog.

The Development of Estate Woodlands.*

THE well-considered reflections of Mr. Hiley, of the School of Forestry, Oxford, on the present state and prospects of afforestation by land owners, deserves the attention of all those who have woodland under their charge. Mr. Hiley analyses with skill and fairness the causes which militate against financial success in forest planting. He gives reasons for believing that, speaking generally, the day of the hard-wood forest in this country is gone, never to recur; but he soothes our regrets for the passing of Oak and Beech by observing first that by turning over of Coniferous forest, existing Beech and Oak need not, and ought not, to be wholly destroyed. As insurance against fire, and as means of ameliorating soil quality, one quarter of the forest should remain of these hard-wood trees. Thus the land owner who decides to displace Oak or Beech by Coniferous forest need fear neither destruction of amenities nor disappearance of facilities for sport. Moreover, as Mr. Hiley points out, it would appear to be good patriotism as well as good business to undertake the gradual conversion of hard to soft-wood forest; for the Empire can supply the hard woods, whereas it cannot supply our requirements for soft-wood. Of Coniferous trees which bid fair to give the best return, Mr. Hiley is convinced that Douglas Fir (Pseudotsuga Douglasii) is destined to prove most profitable. He estimates that where Douglas Fir thrives reasonably well, and where markets are available and cost of land and management reasonable, there should be a profit of some six per cent. on a thirty to forty years' rotation. Second only to Douglas Fir is Larch, and where a near market exists for fencing, the profits may exceed those produced by Douglas Fir; but, otherwise, if cut at fifty years, a return of some five per cent. may be expected. Mr. Hiley sees no future for Scotch Pine, but thinks that, although data are not yet available, some among the following may turn out well: Sitka Spruce, Hemlock Spruce, Thuya plicata, and Monterey Cypress. These trees may give, where they flourish, a return of four or five per cent. The future of estate forestry in this country depends on the recognition by land owners that fairly high returns are only to be obtained on short rotations; and that the area to be dealt with must be sufficiently large to admit of the payment of a salary to a competent and experienced manager. In this respect Mr. Hiley points out that whereas three thousand to five thousand acres probably represent the area which a manager can oversee, ninety-six per cent. of the woodland estates in this country are of lesser area. Finally, it is suggested that where hard wood is to be converted into Coniferous forest, the area which should be dealt with each year should be one equal to the acreage divided by the length of rotation. On an area of one thousand acres which is to be put under Douglas Fir on a forty years' rotation, the planting programme should be not less than twenty-five acres per annum. Where areas have been cut up by the war or have deteriorated, it is possible to obtain grants in aid of planting from the Unemployment Fund, which should help to ensure some profit from the undertaking.

Our Supplementary Plate.—Among the many fine Rhododendrons found by Sir William Hooker during his Himalayan travels, R. Falconeri—illustrated in the full-page Supplement to the present issue—is not the least remarkable. In its native land it becomes a large shrub or even a goodly-sized tree, sometimes reaching a height of thirty feet. The large, elliptic leaves are deep green above and covered on the underside with a rust-coloured tomentum. They may be so much as eight or ten inches long. The handsome campanulate flowers are produced in a large cluster; they are white with a dark purple blotch at the base. Unfortunately, R. Falconeri is not hardy in this country, except in certain parts of Cornwall and one or two especially favoured positions, such as The Duchess's garden at Belvoir Castle. In Ireland, especially in the southern gardens, R. Falconeri is equally as much at home as in Cornwall. Generally speaking, however, R. Falconeri has to be considered as a half-hardy shrub, and needs a glasshouse for protection. The species was introduced about 1850, and there is a variety named eximium which has pink flowers and is a particularly handsome form of this fine Himalayan species.

Hardy Shrubs at Ottawa.—The eighteenth *Annual Report of the Horticultural Societies of Ontario* contains an interesting list of decorative shrubs which have proved their hardiness during prolonged trial at the Central Experimental Farm, Ottawa. The shrubs which have stood the test are numerous, and no gardener in Ontario need lack subjects for planting. The list includes Amelanchier canadensis, one of the most beautiful of snowy Mespilus—but rather a tree than a shrub. Of Berberis, only B. Thunbergii is mentioned, and none would exclude it from any garden, but we should have supposed that there was no need for this species to be the solitary representative of so splendid a genus. The Broom which has proved hardiest is Cytisus elongatus, but a better plant, which is also hardy, is C. nigricans. Although it is a species which gradually dies out after the fashion of Spartium junceum—a short-lived perennial—it is none the less well worth growing. Cytisus purpureus, though its tips may be cut, stands the winter, and C. versicolor, a cross between it and C. hirsutus, with pale purple and yellow flowers, also succeeds. Daphne Mezereum and D. Cneorum are both hardy, as is also Forsythia suspensa. It is curious that this plant seems to do well in Ontario, needing only some protection from wind, whereas in inland England it needs a wall if it is to flower well. Another fine plant which is fairly hardy in Ontario is Halesia tetraptera. In very hard winters it is apt to suffer, but generally survives. The Hydrangeas, H. arborescens grandiflora and H. paniculata grandiflora both stand the winter well. Lespedeza Sieboldii though killed each year to the ground breaks again and produces its autumn flowers in profusion. Prunus triloba flore pleno is hardy on its own roots, but is apt to be killed when grafted; as a bush it may reach ten feet. Spiraea arguta and S. van Houttei both thrive, and so does Tamarix pentandra. The twelve most satisfactory shrubs for planting in Ontario are said to be: Spiraea arguta, Caragana frutex var. grandiflora, Lonicera tatarica and varieties, Lilacs, Spiraea van Houttei, Viburnum Opulus, Philadelphus or Mock Orange, Roses, Robinia hispida, Hydrangea arborescens grandiflora, Tamarix pentandra, and Hydrangea paniculata grandiflora.

Gardeners' Royal Benevolent Institution's Festival Dinner.—We would remind our readers that the Festival Dinner of the Gardeners' Royal Benevolent Institution, at which the Prince of Wales will preside, will be held at the Guildhall, on November 25, at 7 for 7.30 p.m. Many notable people and prominent horticulturists have signified their intention of being present, but, as arrangements have to be completed at an early date, it is desirable that all who have not replied to invitations should send an early notification to the Secretary, Mr. George Ingram, 92, Queen Victoria Street, S.W. 1. As announced in our issue of October 18, we shall be very pleased to receive donations for the fund in connection with this exceptionally interesting occasion.

Interesting Experiments with Mount Everest Barley Seed.—In the uplands of Scotland it has ever been a heartbreaking business to grow grain crops to full maturity, the dreaded autumn frosts invariably appearing before that can be accomplished. Thus earliness is the chief characteristic sought for in the variety sown. It was this that led to experiments being made, under the auspices of the North of Scotland College of Agriculture, with seeds which had been brought back by the Mount Everest Expedition. The samples tried were Kampa Dzong and Neamda, and the place chosen was the farm of Aldunie, Cabrach, Upper Banffshire, 1,100 feet above sea level, the soil being a medium loam. The test was made under ordinary field conditions, and the general practice of the district in the growing of Barley was strictly adhered to. On April 16 the varieties were sown on land which the previous season had grown a crop of Turnips. The rate of seeding was approximately four bushels per acre, and for the sake of comparison a sample of common Barley, with the same rate of seeding, was sown alongside. A distance of two feet was allowed between the plots, thus avoiding mixing of the seed when harrowing. Thereafter the usual Grass and Clover seeds, to which the Barley should act as a nurse crop were sown, and the whole harrowed and rolled in the usual fashion. No special manuring or special treatment of any kind was given, and the area was protected from birds and ground game by netting. Brairding was early in the case of the Mount Everest varieties, and at that time the crop appeared to be fairly thick. During the summer both varieties thinned out somewhat, but always they were far earlier than the common Barley. About July 4 the awns began to appear, and on September 6 the corn was considered ripe enough to harvest, whereas the common Barley could not be ripe before the middle of October at the earliest, with every chance of being frosted before it reached maturity. Neamda yielded much the better crop of the two. Although short in straw, as compared with the common Barley, it nevertheless managed to keep ahead of the young Grass and Clover plants. Unfortunately a proportion of the grains were empty. On the other hand, Kampa Dzong only attained about half the height of Neamda, suffered severely from competition with Grasses and Clovers, and had a much higher proportion of empty grains, thus proving decidedly the weaker of the two. The cold summer and heavy rainfall of 1924 severely tried the earliest of cereal varieties, but the Mount Everest Barleys reached maturity before the time the dreaded autumn frosts were due, and their success in point of earliness seemed assured. As regards yield and quality of both grain and straw, the Everest samples fell far too short of the results obtained by the common Barley to ensure their success. But the much desired quality of earliness has been obtained, and it is hoped by crossing with existing varieties the necessary yield and quality of crop may yet be procured. With this end in view it is intended to continue the test next season, when the results will be watched with interest.

---

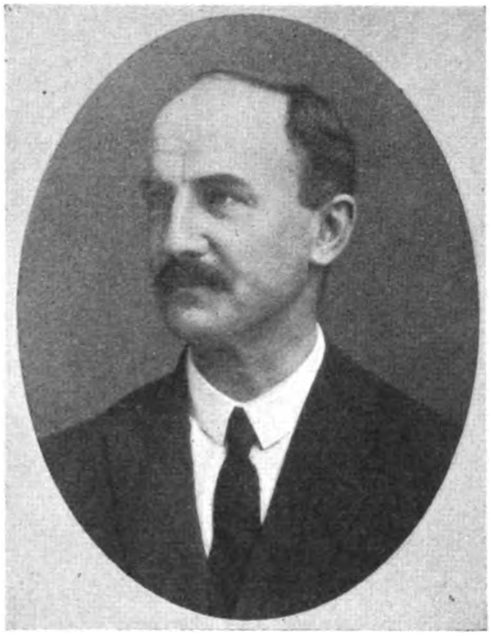
* "A Forest Policy for Land Owners." By W. E. Hiley. *Quarterly Journal of Forestry*, October 24; No. 4, Vol. XVIII.

Potatos Dearer.—*The Agricultural Market Report* for the week ending Friday, 24th ult., issued by the Ministry of Agriculture, states that the rise in Potato prices during September, though small, was exceptional. As a rule Potatos become cheaper during September when supplies of main-crop varieties come on the market, but the prospects of a short crop this year have maintained prices at a relatively high level. The average of 9d. per 7-lbs. was 84 per cent. above pre-war, and 1d. per 7-lbs. higher than a year ago.

Legacies to Gardeners.—The late Mr. William Stones, of Northwood, Seymour Grove, Old Trafford, Manchester, who died on August 5, aged 83, left a legacy of £100 to his gardener, Mr. George Dale. The late Mr. Lionel Lambert Roberts, of Munster House, Haywards Heath and Park End, North Berwick, left a life annuity of £104 to his gardener, Mr. John Dennis Bowers, whether still in his service or not, and, should the wife of his said gardener survive her husband, he left to her a life annuity of £52 to begin on her husband's death.

The Fontainebleau Vine.—At the annual sale of the Grapes produced by the famous Fontainebleau Vine, thirty-three lots were sold, totalling a weight of fifteen kilos. at about one franc eighty-five a kilo. M. Francois Charmeux, a member of the French Horticultural Society, called attention, at a meeting of the Society, to the bad condition of the famous vine, which is in danger of perishing for want of the funds necessary to keep it in health He suggested that a portion of the four million francs donated by Mr Rockefeller for the restoration of the Palace of Fontainebleau should be devoted to saving the historic Vine.

Mr. James Jeffery.—Although signs are not wanting that many large gardens are being restored to their pre-war state of cultivation, it is none the less a fact that on few of the large estates are the gardens cultivated so highly as they were before the war. One of the few, however, is the garden at Lowther, Penrith, the seat of the Earl of Lonsdale, to whom Mr. J. Jeffery has been gardener since the beginning of 1914. Mr. Jeffery began his horticultural career under his late father, who was then gardener to the Earl of Harewood, Harewood House, Leeds. From Harewood he went to Keir, Dunblane, at a time when Mr. Thomas Lunt was at the height of his fame and success as a cultivator and exhibitor of Grapes and other indoor fruits. After three years at Keir, Mr. Jeffery went to Trent Park, Barnet, as indoor foreman and Chrysanthemum grower under Mr. W. H. Lees, who was at that period probably the most successful exhibitor of Chrysanthemums in the country. Following three-and-a-half years stay at Trent Park, Mr. Jeffery became general foreman at Brougham Hall, Cumberland. Two years later he accepted the position of plant foreman in the glass department of Messrs. Dickson and Co., of Edinburgh, but when he had held this position for one year he went to Ireland for this firm to superintend the laying-out of the gardens and grounds on a large estate in the county of Meath. He was occupied in Ireland for two-and-a-half years, and on the completion of his duties there he became gardener to the Earl of Ancaster, at Drummond Castle, Crieff, a position he held from 1905 to 1913. Some idea of the extent of the gardens at Lowther may be gathered from the statement that over fifty acres of grass have to be kept cut by machines; summer bedding is carried out on a very extensive scale, and there are a fine rock garden and extensive Japanese garden, while the recently re-modelled Rose garden is three acres in extent. The Earl of Lonsdale takes the keenest possible interest in his estate and gardens, and affords Mr. Jeffery every possible encouragement to maintain these in the highest condition.



MR. J JEFFERY.

International Rose Trials at Bagatelle.—M. Forestier informs us that the trials of Roses will be continued at Bagatelle during 1925-26. Raisers desirous of submitting novelties for test in these trials should send at least five plants of each variety, preferably in pots, before April 30, 1925, accompanied by a note indicating origin and parentage, and, if necessary, any special treatment required by a given variety. The Roses will be planted at Bagatelle as soon as they arrive and will remain there for two seasons, so that the judges may have a full opportunity of appraising their merits. Goods forwarded by rail should be sent to the Roseraie de Bagatelle, Bois de Boulogne, en gare de Neuilly, Porte Maillot, Paris, and letters concerning the trials to Le Conservateur des Promenades de Paris, 4, Route du Champ-d'Entrainement, par Neuilly (Seine).

A New Plum from Russia.—*Plant Immigrants* No. 218 records the introduction into the U.S.A. by Mr. Frank N. Meyer of a new Plum from Koslov, in the province of Tambov, a district situated in latitude 52° where the winter climate is severe. Mr. Meyer procured the Plum, which is named Golden Reine Claude, from Mr. Mijurin, who was giving special attention to the development of hardy, stone fruits. The variety was propagated by grafting at the Chico Plant Introduction Garden, U.S.A. The fruits are said to be of decided merit; they are one-and-a-half to one-and-three-quarter inch in diameter, with a pale yellow skin, mottled with brownish, irregular blotches. The flesh is yellow, melting, very juicy, and deliciously sweet. It was raised from Prunus spinosa, crossed with P. domestica.

Blue Hydrangeas.—It is a well established fact that certain pink-coloured varieties of Hydrangea hortensis may be induced to bear blue flowers by watering the plants with aluminium sulphate or iron alum. Nevertheless, those who attempt the transformation are not always successful; either the plants fail altogether to respond or they assume an unpleasing bluish-magenta colour. In the former case it is probable that a refractory variety has been used, but in the latter case failure is due, as Monsieur A. Petit * has shown, to the use of too weak a solution. According to M. Petit, satisfactory results are only obtained when the solution of aluminium sulphate is not weaker than two per cent., say not less than 3½-ozs. to the gallon. With this strength the blue colour is as clear as that produced when the variety grows in the most congenial soil. Another point made by M. Petit is that it is not necessary, as is usually asserted, to apply the aluminium sulphate a year in advance. Blue flowers are produced if six or seven waterings of the solution are given, beginning about three weeks before flowering.

Vienna Horticultural Exhibition.—The occasion of the Vienna Fair (September 6-14) was marked by an important horticultural exhibition organised by the Austrian Horticultural Society. There was a number of excellent exhibits, both from the trade and from private gardeners, and the attendance was large. The Society has not yet quite recovered from the stress of the war, but is making good progress, and can boast over 2,000 members, besides a number of affiliated smaller societies. It was founded in 1827, but although it did much useful work, until lately it was very exclusive in its membership. Since 1922, however, its basis has been considerably widened, and the office organization, especially, is now very efficient. In 1923 a horticultural college was founded, with facilities for special studies. Several German delegates attended the exhibition on behalf of various horticultural societies.

Roses Transported by Air from Europe to America.—The new German airship which recently completed its trans-Atlantic flight carried a bouquet of Roses and Carnations consigned to Messrs R. H. Macy and Co., Inc., New York. This, we believe, is the first time that fresh cut flowers have been transported from Europe to America, and we understand that the flowers arrived in perfect condition, suffering little from the three days journey. A nosegay was selected from the bouquet and sent with a complimentary message to Mrs. Coolridge, at Washington, as a souvenir of the historic voyage.

---

* Sur le bleuissement des Fleurs de l'Hortensia. *Revue Horticole.* October, 1924.

A Swedish Gardencraft Annual.—The Föreningen för Dendrologi och Parkvard has sent a copy of their "Annual" for 1923, a very artistic publication in stiff linen paper, with the title *Lustgarden* and a pleasing design in green and gold. It contains nearly two hundred pages, including a great number of very good illustrations, four of which are in colour. It is in the main a review of garden and park design and maintenance in Sweden generally; one section is devoted to the Gothenburg Botanic Garden, which has more than a national reputation. A very interesting series of pictures shows the development of the grounds laid out for the great Gothenberg Exhibition of 1923, which was visited by several horticulturists from this country. No one who saw the result would have guessed how unpromising parts of the site appeared when first cleared for digging. There is a useful list of recent publications on gardening and allied subjects at the end of the volume, also a full index of plants and trees mentioned in the descriptive text. Altogether it is a useful and informative publication, embodying a record of constructive horticultural and arboricultural work of which no country need be less than proud.

Royal Caledonian Horticultural Society.—The Council of this Society has decided to hold a Spring Show at the end of April 1925. Last year the Spring Show was held in the Music Hall, but it has been arranged to return to the Waverley Market in 1925, as this is a much more suitable place. The date of the show has not yet been fixed.

Appointments for the Ensuing Week.—Monday, November 10.—Gloucestershire Root, Fruit and Grain Society's show; United Horticultural Benefit and Provident Society's meeting; Bath Gardeners' Society's meeting. Tuesday, November 11.—Brighton, Hove and Sussex Horticultural Society's show (3 days); Royal English Arboricultural Society's meeting; Jersey Gardeners' Society's meeting. Wednesday, November 12.—Gainsborough Chrysanthemum Society's show (2 days); Wimbledon Gardeners' Mutual Improvement Society's show; Marlow Chrysanthemum Society's show; East Anglian Horticultural Society's meeting; Morley and District Paxton Society's meeting. Thursday, November 13.—Hitchin Chrysanthemum Society's show; Nottingham and Notts Chrysanthemum Society's show (3 days); Sheffield Chrysanthemum Society's show (3 days); Taunton and District Chrysanthemum Society's show. Friday, November 14.—Newcastle and District Horticultural Mutual Improvement Society's show (2 days); Blackburn and District Horticultural Society's show (2 days); Royal Horticultural Society of Ireland Council meeting. Saturday, November 15.—British Mycological Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Athrotaxis imbricata*. The admirers of Conifers will be pleased to learn that plants of this beautiful tree have arrived safely in England. Four specimens were received by the Messrs. Maule and Son, of the Stapleton Road Nurseries, near Bristol, about eighteen months since, in rather a doubtful state, but they soon recovered, and are now in such a thriving state of growth that their permanent establishment in this country may be considered certain. It is described by their collector as a noble Coniferous tree, growing from forty to fifty feet high, on mountains covered with snow the greater part of the year, and he considers it will be able to endure our climate. *J. G.* [We have no confidence in the hardiness of this plant]. *Gard. Chron., November* 10, 1849.

PLANTS NEW OR NOTEWORTHY.

BRUNSVIGIA JOSEPHINAE.

Although planted out in one of the borders around the plant-houses in 1911, where it has grown quite freely, sending up its thick, greenish, closely ribbed, strap-shaped leaves from eighteen inches to two feet long, and one-and-a-half to two inches wide each year, this interesting member of Amaryllidaceae has now flowered for the first time out in the open here (Fig. 112), and I am not aware of any record of it having flowered in the open in this country before. It is by no means a new plant, having been introduced from South Africa in 1814, but it is seldom seen now except in botanical establishments, where it is generally treated as a greenhouse plant.

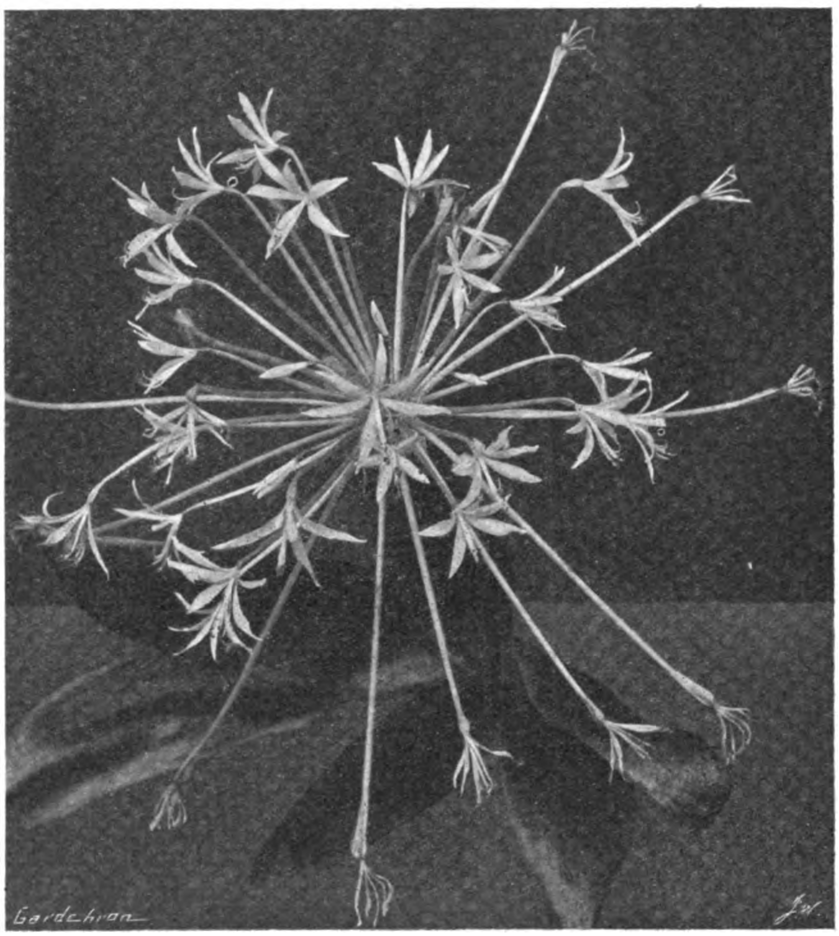


FIG. 112—BRUNSVIGIA JOSEPHINAE FLOWERING IN THE OPEN AT CAMBRIDGE BOTANIC GARDENS.

The inflorescence which first appeared at the beginning of August (the first flowers commencing to open about the middle of August and others continuing for about a month) was in the shape of an umbel on a scape one inch thick and eighteen inches high, bearing on slender pedicels, six to twelve inches long, from forty to fifty reddish-pink flowers with funnel-shaped corollas, six-parted and deciduous. The segments, which are recurved at the tips, are nearly equal, the lower ones being slightly longer and channelled.

The bulbs, which are from five to six inches thick when fully developed, should be planted quite four inches underground in good, rich soil, in a well drained position, where the plant may receive plenty of light. Although it requires a good supply of water when growing, the amount of moisture should be reduced during the resting season, and if it can be withheld altogether for a time so much the better. This interesting species was named after the Empress Josephine, who in her time was a great supporter of botany and horticulture, and who started the fine collection of plants in the garden of La Malmaison, where Brunsvigia Josephinae bloomed for the first time in Europe. *F. G. Preston, Botanic Gardens, Cambridge.*

INDOOR PLANTS.

PLEROMA MACRANTHUM.

The charm of blue-flowering plants, associated with the other subjects that are used for the embellishment of the conservatory and greenhouse in autumn and winter, is always appreciated, and one of the best of blue-flowered plants of this type is Pleroma (syn. Lasiandra) macranthum. It may be either planted out in a border or grown in pots, and will commence to bloom during the autumn and continues to unfold its delightful large, purple flowers during the early winter.

After flowering is over water should be partially withheld from the roots, finally resting the plant entirely during the later months of the year, affording only sufficient moisture to prevent the roots from becoming too dried out. Early in April the plant should be pruned, shortening the lateral growths and the leading shoots. Specimens grown in pots should have the ball of earth reduced, removing the old soil, and repotting the plants in a clean pot of eight or ten-inch diameter. A suitable compost consists of three parts fibrous loam and one part lumpy peat with coarse sand and a moderate sprinkling of charcoal. These details of culture apply to plants that have passed the yearling stage as they are more floriferous in their second year and onwards than those of one season's growth rooted in spring. *F. Gooch. Bossington, Houghton, Stockbridge, Hants.*

The Week's Work

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Preparations for Winter.—November is probably the most trying month of the whole year for those who have the care of Orchids, and is generally considered the period at which the winter treatment of Orchids should commence. The great difficulty is to balance the four principal factors necessary to plant life—light, heat, moisture and air—so that plants which are at rest are not unduly excited to start into growth prematurely, and those that are growing may be encouraged to mature sound, healthy pseudo-bulbs. During the dull days of winter all the light possible is needed for the well-being of the plants, and the glass of the houses should be cleansed, both inside and out. By keeping everything clean and giving reasonable ventilation the plants will be healthier and free from insect pests. From now onwards all Orchids will be benefited by being exposed to all the sun-heat possible, and as the sun is capable of raising the temperature of the houses during the middle of the day, advantage should be taken of this by the cultivator to admit a reasonable quantity of fresh air. In the absence of sun-heat the highest temperature should be between the hours of noon and two p.m., while the lowest should be during the hours of darkness; a range of ten degrees between the two extremes of winter temperature is generally considered to be quite safe for the plants.

Temperatures.—The following temperatures should be maintained:—East Indian house, 60° to 70°; Cattleya house 55° to 60°; Mexican or intermediate house, 50° to 60°; cool house 47° to 55°. The temperature of any of these divisions may be allowed to fall a degree or two during periods of severe frosts. A very hot, dry atmosphere, resulting from excessive fire heat, must be prevented, while a low temperature, when the houses are heavily charged with moisture, should also be guarded against. In order to obviate resorting to an excessive amount of artificial warmth during unusually cold weather, it is a good practice to cover the houses with canvas, or garden mats. These should be tightly tied at the ends, and several may be sewn together in lengths as required for each house and may easily be rolled along the lower part of the house at dusk, taking them off again at daybreak. Where the open lattice blinds are left on the houses they may be lowered over the mats, which will assist in holding them firmly in their place, besides helping to keep the temperature constant. In ventilating the houses in very cold weather fresh air should be admitted through the bottom apertures, which should be as near the ground line as possible, or opposite to the hot water pipes, opening those on the leeward side.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Deciduous Trees and Shrubs.—The transplanting of deciduous trees and shrubs may be commenced at any time now. Not only can the work be done more comfortably and expeditiously at the present time than at midwinter, but root action also takes place immediately and the plants succeed much better. In preparing sites for new shrubberies the whole ground should be trenched, and if the soil is poor, a liberal quantity of manure should be added. In cases where worn-out shrubs have to be scrapped and new ones planted in the same positions, the soil is sure to be impoverished and all the available space should be well-prepared and heavily manured before replanting is carried out. Firm planting is essential and small trees which need supports should receive these at the time of planting.

Roses.—The planting and transplanting of Roses of all kinds may now be undertaken, and every effort should be made to complete the work as early as possible. Where new beds are to be planted the soil will have been prepared in advance, and the planting is straightforward work. Where it is necessary to replace plants in existing beds, holes should be taken out as large as circumstances will allow, and a quantity of rich compost added when planting. The roots should be spread out carefully in all directions, the soil thoroughly consolidated, and a light mulch of rotten manure applied on the surface. In planting standards good stakes should be placed in position before planting. For weeping standards, with six feet or seven feet stems, especially strong supports are necessary, and a good plan is to use three-quarter-inch gas piping to the required length, cemented into six-inch drain pipes at the base. If these are prepared before planting they will prove very effective and lasting supports.

Specimen Plants.—Plants in tubs which have been used for the embellishment of steps and terraces should now be removed to a frost-proof structure. Agapanthus, Agaves and Hydrangeas should be kept on the dry side, when they will withstand moderately low temperatures without harm. Oranges and Oleanders do not withstand low temperatures without losing their vitality, and should be wintered in a cool house. Large Bay trees may be protected by standing them near the wall of a building and erecting a canvas screen around them. These plants frequently suffer more from cold winds in the spring than from frost.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Herbaceous Spiraeas (Astilbe).—The value of these plants for pot culture and for forcing is well known, and their comparative cheapness brings them within the reach of all. The clumps should be potted this month, pots of six-inches diameter being the most useful, though the largest clumps may require seven-inch receptacles. They should be potted firmly, using a rather rich soil. The best varieties for forcing are S. japonica, S. astilboides floribunda, S. japonica multiflora compacta, and the varieties W. E. Gladstone and Queen Wilhelmina, all white. Of the pink varieties, Queen Alexandra, Peach Blossom, and America are amongst the best. The pink varieties should not, however, be forced hard, as they lose colour if subjected to strong heat. For the cool greenhouse in spring I would recommend three beautiful varieties of Astilbe Arendsii type, viz., Salmon Queen, Ceres, and Venus.

Dicentra (syn. Dielytra) spectabilis.—Roots of this old favourite and useful plant for the greenhouse, and which forces easily, may be procured and potted this month.

Richardia africana.—Plants of Arum Lily, which are well established in their pots and will be required to flower at Christmas and onwards, should be placed in a greenhouse, not too far away from the roof-glass. The night temperature should be 50° to 55°. The plants will require an occasional watering with tepid liquid-manure.

Darwin and May-flowering Tulips.—A batch of these bulbs, grown steadily in pots, should prove useful in providing a succession of flowers after the latest of the forced Tulips are over, and it is not yet too late to pot them. Some of the best amongst many excellent varieties of the Darwin type are Farncombe Sanders, scarlet; Clara Butt rose-pink; Lucifer, orange-red; Pride of Haarlem, carmine, and Sweet Lavender (listed by some firms as William Copland), which is the most beautiful of the lavender shades. Of the May-flowering varieties Ellen Willmott, soft yellow; Inglescombe Pink, Inglescombe Scarlet, Caledonia, Orange Scarlet, Orange King and Mrs. Moon, yellow, are all good.

Bulbs.—The earliest potted bulbs of Polyanthus and double Roman and Paper White Narcissi, which have well filled their pots with roots, may be transferred from the cold frames into gentle warmth. Place the plants on a shelf as near to the roof-glass as possible, and after a few days water them with weak liquid-manure.

HARDY FRUIT GARDEN.

By R. W. THATCHER, Gardener to MARK FIRTH, Esq., Carlton Park, Market Harborough, Leicestershire.

Pears.—These fruit trees should be planted in well-drained, loamy soil. If the ground is not of this nature, turf from an old pasture should be well mixed with the existing soil if it is poor. Pears worked on the Quince, which is a dwarfing stock, do not make so much wood as they do on the Pear stock, hence such trees may be planted on rich soil and will probably bear in a year or so. Above all, see that the soil is deeply worked to ensure efficient drainage, as the Pear resents a stagnant soil perhaps more than any other fruit. In pruning the trees after planting, do not be too drastic in cutting back the leaders, or they will make strong side shoots, and fail to produce good fruit-spurs.

Varieties of Pears.—Early sorts of good flavour are Doyenné d'Ete, Beurré Giffard, William's Bon Chretien, Dr. Jules Guyot, Jargonelle, which succeeds best on a wall, and Marguerite Marillat, followed by Doyenné du Comice, one of the best of all Pears, Beurré Diel, Beurré Superfin, Beurré Bosc, Comte de Lamy, and Fondante d'Automne. Late varieties for use at Christmas and after include Josephine de Malines, Santa Claus, Winter Nelis, Thompson's, Easter Beurré, and Olivier de Serres. Do not omit to plant a variety or two of stewing Pears, such as Catillac, Vicar of Winkfield, Uvedale's St Germain, and President Roosevelt.

Wall Nailing.—As soon as wall trees are bare of leaves, the training of the shoots should be commenced, except in the case of Peaches and Nectarines, the training of which is best deferred until early in the spring. If cloth shreds are used for fastening the shoots to the wall, these may be prepared on wet days. Medicated shreds are best, being cleaner, and they do not afford a harbour for insects.

FRUITS UNDER GLASS.

By T. PATEMAN, Gardener to SIR CHARLES NALL-CAIN, Brocket Hall, Hertfordshire.

Early Permanent Vines.—In gardens where glasshouses are limited in number the earliest Chrysanthemums are often flowered in the early vinery. Where the Grapes are required very early in the year, the vineries should be cleared of the flowering plants, and the vines pruned and cleansed. If the vines are young and have been kept free from insect pests, such as red spider, and are not overburdened with loose bark, it is a waste of time to scrape the rods too severely. The vines should be well washed with strong soapy water, to which may be added nicotine emulsion, by means of a fairly stiff brush, but care should be exercised when working the mixture around the "eyes" not to injure the latter. Repeat the washing after a lapse of several days; if the vines are old, with long spurs, and mealy bug has been troublesome, extra care is needed to deal with this pest. In the first place the rod should be well washed with hot, soapy water, after which the old bark should be carefully removed, and the house treated with cyanide

I have had very good results by the use of cyanide at a strength of two ounces to the thousand square feet. In using this deadly gas, great care must be exercised when leaving and entering the house in the early morning. The ventilators and doors should be opened some time previous to entering the house. Repeat the washing of the rods and stop the smallest holes and crevices with undiluted Gishurst compound. The structure, including the woodwork, glass, and walls should be scrubbed thoroughly, after which the walls should be lime washed, adding a wine-glass of paraffin to each gallon of wash, which should be well worked into the smallest crevices. Remove carefully all loose material and soil, especially near the stems, this being a favourite hiding place for mealy bug and other insect pests.

Top-Dressing Vine Borders.—After all loose material and soil have been carefully removed the borders should be examined and, if found to be dry, soaked thoroughly with lukewarm water before applying the top-dressing, which should consist of good sweet loam enriched with fine vine-border compound, bonemeal, fine charcoal, and wood ash. Should the border be outside it should be treated as advised above, and if the weather is open and dry, it should be left exposed for a short time, when a thin covering of fresh stable litter may be applied to protect the new soil from being lifted by frost.

THE KITCHEN GARDEN.

By WALTER Y. STAWARD, Gardener to Mrs. JOHN FEENEY
The Moat, Berkswell, Warwickshire.

Scorzonera and Salsify.—These crops should be lifted now by means of a spade, as the points of the roots are very easily broken. Trim off the foliage and arrange the roots neatly in a heap in a place where frost cannot harm them, covering them with plenty of sand.

Runner Beans.—This crop is now finished, and the sticks should be pulled up, tied in bundles, and placed under cover for another year. Remove the Bean stalks to the rubbish heap and burn them. Mark the position of the rows and next year sow Parsnip seeds in the exact place where the Beans were growing. The trench that was taken out for the Beans having been enriched with good manure, the latter will be well-decayed by the time the Parsnip seeds have germinated.

Turnips. — Late-sown Turnips should be pulled up, trimmed of their foliage, and placed in sand, where they will keep sound for many weeks.

Potatos.—Seed tubers that have been selected for planting next year and placed in the open to become green, should now be placed under cover in case of frost. Examine the tubers and remove any showing signs of decay. Place the sound ones in a dry place but where plenty of air can be admitted.

Asparagus.—The old stems should be cut down, all weeds cleared away, and the bed dressed with well-rotted manure. The manure may be covered with soil taken from the paths between the beds.

Broccoli.—These plants may now be heeled over before severe weather sets in. This is done by removing the soil on the north side, inserting the spade its full length on the opposite side and tilting the plants over to the north. Make the plants firm in the ground by treading them in as the work proceeds.

Broad Beans.—A sowing of Broad Beans should be made in a sheltered corner of the garden with a southern exposure and protected from north and east winds. Beans do best on heavy land, but not so heavy as to be waterlogged in winter. Plenty of manure should be worked into the ground.

FLORISTS' FLOWERS.

THE DECORATIVE DAHLIA.

THE article on this subject by Mr. Shoesmith, on p. 229, is of considerable interest to all who grow Dahlias.

Less than a decade ago the Dahlia had declined in popular favour. The cause was, undoubtedly, the advent of the Cactus type of the flower; Cactus Dahlias, wonderful in size, beautiful in shape, and charming in colour, were exhibited all over the country. These flowers captivated the public, and those who had gardens became ready purchasers of plants. What was the result? Amateur growers produced bushes of foliage in which were hidden miserable caricatures of the flowers they had seen at the shows. The flowers had short, weak stems, and they drooped so badly that they were totally unfit for decorative work of any description and, moreover, those sorts that did possess a semblance of stem were hopeless as cut flowers, for they would not stand any time in water. The Cactus type was followed by the Paeony-flowered type, which created an interest for a year or two, but the unreliability of these Dahlias as cut flowers and their flaccid stems were the same as in the Cactus sorts. Growers became dissatisfied with Dahlias and almost dropped their cultivation.

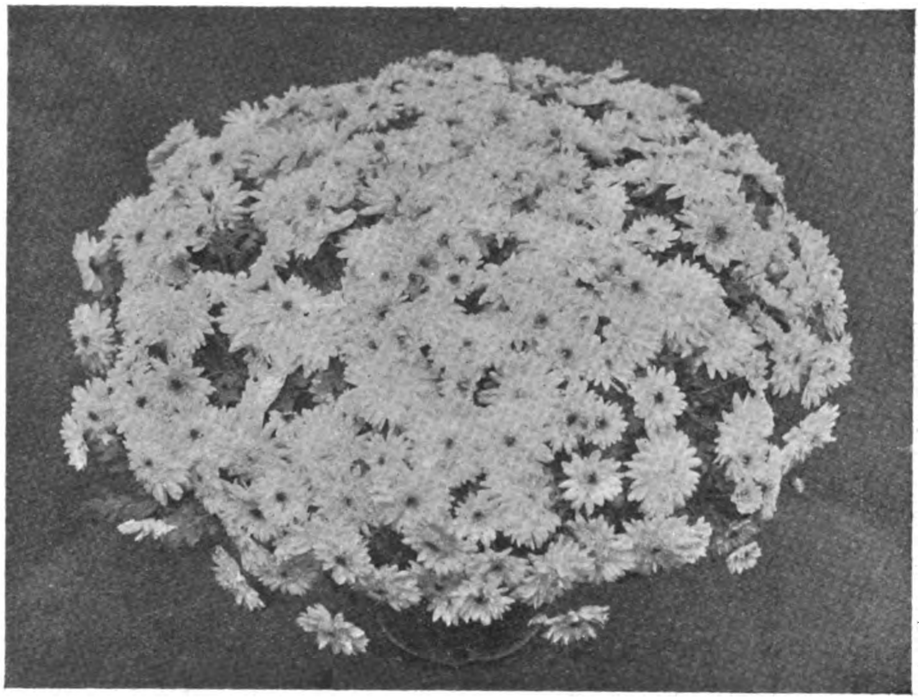


FIG. 113.—CHRYSANTHEMUM MABEL WESTON.

The renaissance of the Dahlia and its present popularity dates from the introduction of the Collerette forms. These Dahlias not only flower in abundance and produce their blooms well above the foliage, but have the merit of possessing flowers which last well when cut. The stem of every variety is firm and stout and the bloom is held erect. A reformation was made in really Decorative Dahlias.

In these days the term "decorative" covers many weaknesses and many sins in the floral world. All honour to men like Mr. Hay who have done valuable work in re-popularising the Dahlia. The best kinds for cut decorative work are the Collerettes, the Miniature Paeony-flowered, and the Singles.

It was indeed well that the Royal Horticultural Society, in conjunction with the National Dahlia Society, insisted on sending the plenitude of seedlings that are submitted each autumn for awards, to Wisley for trial under garden conditions. That was a step in the right direction, but if public confidence in the Dahlia is to be retained, a step further still requires to be taken. I noticed with great regret, for example, that in the competitive classes for a collection of Dahlias at the leading shows this season, that Cactus sorts were pre-eminent. This is the old story over again. The cure for this is for the societies to insist in their schedules that no wiring of stems will be permitted. This would compel raisers to concentrate on the raising of seedlings with the desired stiff stems of suitable length.

There is one other point. The Dahlia was very popular in America but it is now on the decline, largely because of the notorious craze in that country for monstrous flowers. These huge blossoms—so-called "Decorative" varieties—are hopeless as cut flowers.

The Dahlia is again on its trial. As Mr. Shoesmith puts it:—"There is every indication that the Dahlia is rapidly regaining its popularity both as a cut flower and for garden decoration. It is in the grower's power to see that this interest is not only retained but still further encouraged." I agree with him and repeat his warning. Mr. Macself, in a recent article in these columns, has been deploring the lack of a standard in modern Gladioli. This applies also to the Dahlia. At present there is none. *George M. Taylor, Edinburgh.*

CHRYSANTHEMUM MABEL WESTON.

THE small trained plant illustrated in Fig. 113 is Chrysanthemum Mabel Weston, classed as an Anemone-Single. Although the training of Chrysanthemums is not so much in vogue as it used to be, I think readers will admit that, in this case, nothing of the beauty of the plant has been lost by the method. Mabel Weston was raised at Heston, Middlesex, by Mr. P. A. Cragg, and received the award of a First-Class Certificate at the National Chrysanthemum Society's exhibition on Nov. 3, 1921. This variety, if not disbudded too severely, produces exquisite flowers. The ray florets are white and so are the outer rows of the disc, but the centre of the disc remains green for a considerable period, this giving the blooms a very pleasing appearance. Later, the flowers become white and very full in the centre. The variety is extremely free-flowering and is very useful both for conservatory and house decoration. The plant illustrated is quite a small one, being two feet four inches through and ten-and-a-half inches high; it is growing in a 9-inch pot. *Mark Mills, Coombe, House Gardens, Croydon.*

NOTES FROM WISLEY.

Alterations in the arrangement of the rock beds near the summit of the Wisley rock garden have just been completed. The shape of the beds is now much improved, and a more natural appearance of stratification has been imparted to the stones which support the soil.

One of these beds has been planted with a very comprehensive collection of Saxifrages of the encrusted section, among which there are no fewer than seventeen different varieties of Saxifraga Aizoon, as well as a number of varieties of S. Cotyledon and S. lingulata. The last named is the parent of several hybrids raised at Wisley, one of the best of which is named Snowflakes.

A few bright flowers are still to be found on the rock garden, such as Schizostylis coccinea, whose red flowers harmonise well with the neighbouring berries of Stranvaesai undulata. Polygonum vaccinifolium is still blooming well, and the little Rhododendron idoneum (Forrest) has now commenced to flower. Near the rock garden ponds a plant of Oxydendron arboreum, which must be at least thirty years old, has nearly finished flowering and its leaves are reddening, while other specimens are still further advanced and are in their full autumn beauty. The foliage of Cistus laurifolius has now assumed the pronounced blue tint which it carries throughout the winter.

In the wild garden Cyrilla racemiflora is in bloom, the small white flowers of which are borne in spike-like racemes. Another Ericaceous shrub is Pieris formosa. This plant, remarkable for its Laurel-like foliage, is bearing an exceptionally large number of flower buds this year. In common with other members of the Pieris family the flowers take a long time to develop and invariably have been crippled by frost before they are ready to open.

In the new shrub borders an unnamed Euonymus collected by the late Reginald Farrer is fruiting. It differs from E. latifolius in that it still retains its foliage, and the capsules are of a very pale flesh-pink colour. A small tree of Cydonia cathayensis has fruited freely this year, and its Lemon-shaped Quinces are of such a size that although their fruit stalks are situated at considerable intervals along the shoots they appear to form a cluster. Among other well-known shrubs in this border are some plants of Spiraea prunifolia, conspicuous by reason of their attractive autumnal colouring.

New borders have recently been made beneath the walls of the laboratory. Along the south wall large numbers of Amaryllis Belladonna have been planted, while on the western side there should be a fine show of spring bulbs. Many interesting climbing plants are making good progress on the walls, among which a plant of Clematis uncinata has beaten one of Eccremocarpus scaber by a short head in a race to the roof. Two Escallonias, E. pulverulenta and E. exoniensis, are in flower.

In the herbaceous borders the giant Senecio clivorum has flowered very well this year. This plant is really a bog garden subject, but the incessant rain has made it quite at home in the flower border. Some of the forms of Aster ericoides are flowering well, one of the latest of which is A. e. compacta alba. *J. G. White.*

HARDY FLOWER BORDER.

CLAYTONIA AUSTRALIS.

Most of the Claytonias have a reputation for weediness and an irrepressible desire for colonisation, yet C. australis is a refined plant and well-behaved. Even so, a certain tendency in this little plant to spread somewhat healthily by off-sets makes me wonder whether it also is imbued with that passion for emigration common to the race. However, it is sufficient for the present to appreciate its good points. C. australis makes a mat of short and narrow, grass-like leaves, which the uninitiated might take to be a patch of recently-clipped turf. Amid this in early summer nestle the little pearly-white flowers which have been well described as resembling shirt-buttons.

We grow this Claytonia in a cool, partially-shaded place where there is a good deal of leaf-mould in the well-drained soil, and such conditions seem to suit it admirably.

ASTRAGALUS MONSPESSULANUS.

The Milk Vetches are seldom seen in the average garden, and comparatively few are offered by nurserymen. The reason for this is probably to be found in their somewhat weedy appearance, indefinite colours and the resentment which they display towards root disturbance even of the most considerate kind.

The best of the species in cultivation appears to be A. monspessulanus, and a well-established specimen of this plant, forming a wide mass of prostrate, wiry branches furnished with their pale green Fern-like leaves, is very charming, especially when, towards the later summer, the plant is bearing its pretty wine-red flowers. Like so many others of its race, this Vetch grows best in a well-drained soil containing a plentiful mixture of stones and grit, and the position should be fully exposed and sunny. *J.*

PULMONARIA ARVERNENSIS.

Pulmonaria arvernensis, a species from the Auvergne, is a neat and exceedingly pleasing plant, though less showy than some of its congeners.

The type is a dwarf plant some six inches, or rather more, in height, with dark blue flowers. It is a good plant for the border or rock garden, and is prized on account of its early blooming and fine colour of the flowers. The type is not nearly so common as the white variety alba. As a flower for near the front of the border or for the rock garden it has much to commend it, and has few faults. The plant is thoroughly hardy, free-blooming, a true perennial, and easily increased by division at almost any time of the year.

CLEMATIS RECTA.

Clematis recta is frequently offered by nurserymen under the name of C. erecta, a pardonable error indeed, but one which should not be perpetuated. It is one of the non-climbing species, which proves valuable in a mixed border, because of its pleasing appearance and the distinct feature it gives to such a position, differing, as it does, very largely from other border flowers of summer with which it may be associated. The deep-green foliage, and masses of small-creamy-white flowers, borne in great profusion at the tops of the stem, give the plant a pleasing appearance. It varies in height, as most flowers do, according to the character of the soil. Its usual stature is about three feet, although it is occasionally taller. When grown in the flower border it should have a support, but it may also be employed as a trailing plant where its branches and flowers can hang over a large stone or over banks. In very sheltered positions and in very favoured seasons it may stand erect without support. C. recta forms a very hard root-stock, difficult to divide, although it may be divided when the root becomes large enough, but single varieties may be raised from seeds. From a batch of seedlings it is easy to select superior forms.

I have found seedlings vary considerably in size and neatness of flower. A few forms are occasionally met with under various names, and one called C. recta mandschurica has a good reputation, but equally good forms can be selected from seedlings. There is also an old, but rather rare, double variety called C. recta plena. It is quite double, but I do not know that it is any more desirable than a good single variety. I may add that C. recta is a good cut flower for large vases in the home, and that either for this purpose or in the border it will be found valuable in summer. *S. Arnott.*

TREES AND SHRUBS.

COTONEASTER HENRYI.

Three or four years ago, on the advice of a friend very knowledgable in gardening, I obtained a dozen or so plants of Cotoneaster Henryi, and when they came I was puzzled on account of their spreading habit to know what to do with them. They seemed to want to recline, and so I laid them on their backs on a bank behind a herbaceous border. There they reposed a their ease for two years. Last year they produced a few berries which the birds ate; but this year they have thoroughly awakened, have sent up many long, vertical-growing shoots, and are crimson with innumerable berries. Whether because of the imposing number or because other berries are numerous I cannot say, but this year the birds have left the berries of C. Henryi entirely alone. If the plants fulfil their present promise they will be one of the most valuable assets in the garden. It looks as though they were growing out of their youthful gaukiness into graceful and brilliant maturity.

Whilst on the subject of Cotoneasters, this year's brilliance of the berries of C. horizontalis deserves recognition, and the behaviour of the berries of C. acuminata, comment. Nicholson, the impeccable, calls them scarlet; with me they begin a dusky reddish-purple and gradually become of redder hue; scarlet they are not. *N.*

CYTISUS SUPINUS.

This Broom, which is often known as C capitatus, is a variable shrub, the several forms in which it is seen apparently representing different parts of its extensive geographical range from east to west of Southern Europe. The plants in these gardens make loose-habited, rather straggly bushes, the very copious leafage being a fresh green. All parts of the shrub are covered by silky hairs, which give the foliage that soft appearance which suggests susceptibility to wet and frost, but I have not found C. supinus to be other than quite reasonably hardy in any dry, warm place and light soil.

Though not a particularly showy species—the flowers, which are borne in terminal umbels on the young wood, are a pale yellow—it is notable for blooming late in the year when practically all other Brooms are over. Normally its flowering season with us is in August and September, but it is by no means unusual to see the little bushes gay with bloom right into November.

VERONICA FAIRFIELDII.

This shrub closely resembles the beautiful V. Hulkeana, and is a plant of singular charm and refinement. It is, however, dwarfer than V. Hulkeana, and although the habit is much the same, and the rather smaller leaves very like those of that New Zealand species in colour and form, the flower panicles are broader and shorter and of a rather more rosy hue.

V. Fairfieldii originated in the Fairfield Gardens, Dunedin, New Zealand, and it has been suggested by Cheeseman that it may be a Hulkeana · Lavaudiana hybrid. It appears to be hardier than V. Hulkeana, but with us it has not shown the vigour that one would wish.

STYRAX WILSONII.

This delightful shrub is still uncommon in gardens, though sent from Western China by Mr. E. H. Wilson nearly twenty years ago. It is a deciduous species growing, it is stated, up to ten feet in height, but it is one of those subjects which possesses the very estimable virtue of flowering when quite young.

A specimen in this garden not much over three feet high flowered very liberally last June, and, as to its hardiness, the plant referred to has withstood several winters unprotected, including exposure to trying frosts. We grow it in an open spot in the woodland where some of its half-hardy neighbours (Cistuses) have been badly injured by cold.

S. Wilsonii is an open-habited shrub with very slender branches and slightly downy, ovate leaves about an inch long. The blossoms, which are of a waxen whiteness, are pendant and produced singly at the leaf axils. *J. N. Wales.*

PUBLIC PARKS AND GARDENS.

If the Oxford City Council accepts the very generous offer made to it by Major Fennel, it will ere long have a fine public park thirty-one acres in extent at North Hinckley, free of cost, except that which is necessary for roads, fencing, and any other lay-out.

The Brighton Town Council proposes to reconstruct the western lawns of the lower esplanade to make provision for a miniature golf course, also a refreshment pavilion and children's sandpit, the whole to be surrounded by flower beds and enclosed by a low wall. The lines taken are the existing boundaries of the present gardens on the upper esplanade site, the sea wall on the east side, and the existing point of the gardens at the Hove boundary within one hundred feet of the West Pier. The approximate cost of the scheme is £18,000.

The Ministry of Health has sanctioned the borrowing by the Ealing Town Council of the sum of £600 for the formation of an additional bowling green in Lammas Park.

Bath City Council has under consideration the construction of a garden concert hall, and a sub-committee of the Council appointed to deal with the matter recommends the erection of the concert-pavilion on the north side of the Institution Gardens. It appears that the north end of the Institution Gardens possesses many advantages for the purpose. This is centrally attached to gardens already used for concerts. The provision of a roof-garden would be practical, and the roof could be planted with shrubs and flowers. Further advantages are that the river and river bank could be utilised as additional attractions.

The Leatherhead Council has under consideration the purchase of a portion of land on the Elm Bank Estate between the Parish Church and Dorking Road. The Chairman of the Council has stated that a gentleman, a stranger to the town, has given £200 towards the purchase, the cost of which would be £1,200. It is proposed to raise a loan for the remainder of the money. Following a suggestion that some of the townsmen might like to help in the matter, it was stated that Mr. Arthur Moore had offered to head a subscription list with £5 5s.

Huddersfield Board of Guardians has appointed Mr. Percy Clapham, of Calverley, Leeds, to the post of gardener to the Leeds estate. The teaching of gardening to children will be part of the duties of Mr. Clapham.

ALPINE GARDEN.

A FEW CHOICE ROCK-PLANTS.

The following new or comparatively new alpines are all worthy of a place in every rockery.

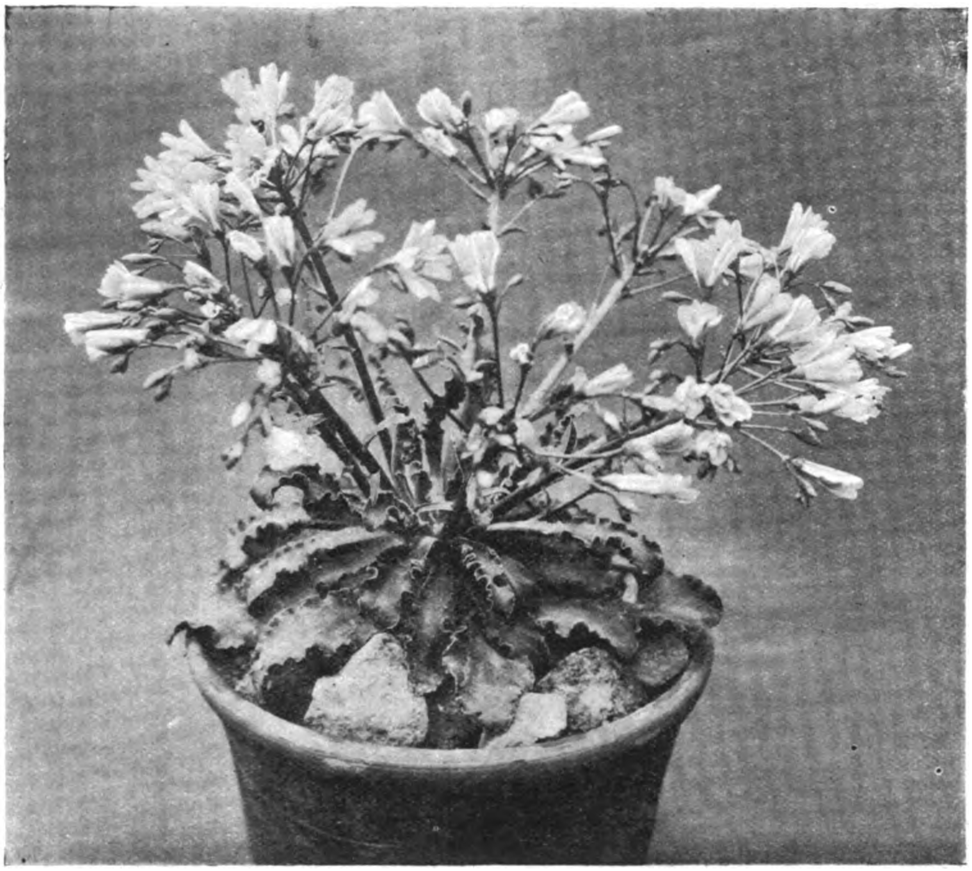


FIG. 114.—LEWISIA HOWELLII.

Silene Hookeri, one of the most beautiful of Silenes in cultivation, has low-growing, branching stems that are covered in the flowering season with exquisite pink flowers; the plant is easy to cultivate and of rapid, spreading habit.

Hepatica triloba alba plena is a desirable double-white form of the triloba section.

Androsace thibetica, a beautiful new species, has neat tufts of pointed rosettes, furnished with a profusion of brilliant, rosy-white flowers. The plant enjoys a dry, sunny position. A. Reverchonii has white flowers and is a plant of great charm.

Soldanella hungarica is a vigorous, free-flowering species, producing a wealth of pretty pale blush blossoms. The genus Lewisia comprises a class of rock plants that succeed in dry situations, in full sun; they need to be supplied with copious waterings during the growing season, but the plants should be kept as dry as possible during the winter. L. columbiana has long, succulent, leaves and umbels of large, sulphur-striped scarlet flowers; it is a very beautiful plant.

L. Howellii (Fig. 114) makes a fine pot plant for the alpine house. The flowers are buff-yellow streaked with pink.

L. Howellii vera has large, handsome, rose-coloured flowers, striped with crimson. This is a very rare Lewisia and one worthy of extended cultivation. Gentiana Farreri is a plant of great beauty, and of easy cultivation. This species is of creeping habit, quick of growth, and produces a full crop of beautiful sky-blue and white-throated blooms, the plant flowering for several weeks without a break

G. sino-ornata is another charming Gentian and worthy of a place in every rock-garden. The large, rich, deep blue flowers are produced in great numbers from July until November. This species also is easily grown in a half shady position on the rockery. Roscœa cautiliodes has somewhat the appearance of an Orchid. It produces stout stems bearing many pale, golden-yellow flowers. The plant succeeds in a sunny or partial shady position.

Campanula Warley White is one of the most beautiful of Alpines in existence, with trailing sprays of double-white flowers produced in great profusion.

C. Bellardii var. Miranda produces large quantities of flowers of a shade of silvery-blue. This Bellflower is easily grown in any sunny or partial shady spot, in the rockery or border. The flowers have a delicious honey-like perfume.

Erigeron hybridus Elsie is a plant of neat dwarf-growing habit, rarely exceeding nine inches in height. The flowers are a pleasing rosy-pink, with a conspicuous brown disc. This Erigeron flowers from July until late autumn; it is a charming addition to the rockery.

Cheiranthus Pamela Purshouse is a fragrant, perennial, hybrid Wallflower. The flowers are brilliant orange, and produced in great profusion. This plant has proved an excellent subject for the rockery. Geum Purdomii, a pretty species with neat cushions of Fern-like foliage, is another good alpine and useful also for the border. The flowers are golden-yellow and of medium size. *G. L.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

GARDEN-CRAFT IN THE CANTICLES—VIII.

THE GARDEN OF SIMPLES.

TO deal adequately with the Garden of Simples, spices or herbs mentioned in the *Song of Songs*, would require a volume. Take, by way of illustration, the principal passages as translated by the revisers, "Thy shoots are an orchard of Pomegranates with precious fruits; Henna with spikenard plants; spikenard and saffron, calamus and cinnamon, with all trees of Frankincense; myrrh and aloes, with all the chief spices" (Cant. IV. 13-14). Seeing that many of the plants here named are not natives of Palestine, and bear in the Hebrew names which are foreign to that language, it is very clear that when the Song was written there had been much intercourse with distant lands, and plants of many different kinds had been introduced. Even if the Song was composed by or in the time of Solomon, we know that such commercial enterprise was fostered by him, and if its composition is of later date it is easy to understand how so many important spices and perfumes should be familiar to the writer.

In very early times in all the well-known countries of the East, from Egypt, through Palestine, Arabia and Persia to Babylonia and Assyria, royal personages sought out the choicest perfumes and plants, both for cultivation in their gardens and for use in thurification of the person and the palace, as well as in the embalming of the deceased. The writer implies that a royal garden in Syria would grow such plants as Henna and Spikenard, Saffron and Cinnamon, Myrrh and Aloes and Calamus, and if we admit that he is to some extent drawing on his fancy, it is clear that at least the names of these plants were all familiar to him, though few of them were natives.

Reference has already been made in these papers to the Privet-like plant with fragrant flowers which bore the name of Henna, though it should be observed that this word does not occur in our Authorised Version, which reads Camphire or Cypress, both here and in Ch. I. 14. The Hebrew word is *Copher*, from which came the Greek *Kupros* or Cypress. This is one of the few names for aromatic plants mentioned above which can possibly claim a Hebrew origin, although the etymology, or at least the root, is still doubtful. While the modern Hebrew is *Copher* the Aramaic is *Cuphra*, which comes very near the Greek form. The flowers grow in clusters like Grapes, whence the expression "My beloved is unto me as a cluster of Henna-flowers," and everyone who is familiar with the clusters of miniature Grapes which the Privet yields will see the appositeness of the figure. The plant is mentioned nowhere else in the Old Testament, but all the authorities are agreed that the word *Copher* must refer to Cupressus Lawsonia alba. Well-known in Nubia and Egypt, Arabia and India, it also grows on the shores of the Dead Sea. It is frequently cultivated in Eastern lands for its fragrance, its utility as a hedge-plant, and particularly on account of the dye which it yields. This has been in use from time immemorial as the antiquary has discovered by the study of mummies. It stains "a reddish rust colour and cannot be removed by soap; nor does it need renewal more than once in two or three weeks. The object of the custom (states Canon Tristram) is to check the perspiration of the hands and feet." Clusters of Henna flowers are still sold in the streets of Cairo and other cities, and having been naturalised in the West Indies the plant is there known as the Jamaica Mignonette. Its Bible name of Camphire must not lead to confusion with Camphor.

Spikenard is known in the Song simply as Nard. The word occurs three times, and like the word for Henna is found nowhere else in the Old Testament. In the New Testament we find reference to it only once (Mark XIV. 3), and here, though translated Spikenard in the text, it occurs as pure, liquid or pistic Nard in the margin. The Greek name, like the Hebrew, pertains to an odoriferous plant which found its way to the Holy Land from India by way of Persia, as we learn, in part at least, by the forms which the name acquires in the different tongues. Thus the Sanskrit name for Nardostachys or Spike-nard is *Nalada*, which assumed in Persian the form *Nardin*, whence the Greek *Nardos* and the Hebrew *Nard*. Its root is found in the Sanskrit *Nal*, to smell, the plant being so named on account of its fragrance. As a perfume and ointment it found its way in very early times into Palestine, Greece and Rome, where, as the historians inform us, it was much in favour with the ladies as a cosmetic. It is not so acceptable to modern taste and has therefore ceased to be used. The plant which yields it is a perennial herb closely allied to our own common Valerian, which has a peculiar fascination in this country for cats. The smell of the root of the foreign plant, however, is much more pungent. Nardostachys is a native of the Himalayas, and in India the root is highly prized as a perfume for the hair. The order to which it belongs (Valerianaceae) contains many plants which are aromatic, and owe their strong smell to the presence of a volatile oil. This accounts also for their value to the herbalist and pharmacist.

The Hebrew name for Calamus employed in the Song is *Kaneh*. It occurs also in the Book of Exodus (XXX, 23), as one of the chief spices to be used in the preparation of the "holy anointing oil; a perfume compounded after the art of the perfumer." We find the word also in Isaiah (XLIII, 24) "Thou hast brought me no sweet cane" or Calamus (margin), and in Ezekiel (XXVII, 19)—"Cassia and Calamus were among their merchandise." Either in the sense of reed, cane, stalk, Calamus, or in some derived sense the word *Kaneh* occurs upwards of sixty times in all in the Hebrew Bible. It appears to be a genuine Semitic word. The root *Kanah* from which *Kaneh* is derived recalls the Assyrian word for a reed (*Kanu*), which resembles the Arabic name for a spear shaft. The word was borrowed by the Greeks and Romans, whence it came to us through the French. Our word cane, therefore is directly descended from the term used in the Canticles for the Calamus, or the Andropogon, a perennial grass, which is a native of India, and yields an aromatic oil long since employed by the perfumer. In Jeremiah (VI, 20), the question is asked—"To what purpose cometh there to me Frankincense from Sheba, and the sweet cane (Calamus or *Kaneh*) from a far country?" Another species of Andropogon is usually known as Lemon-grass or Ginger-grass, while others yield such well-known Eastern grains as Doura or Durra and Shaloo.

The reference to Frankincense in Jeremiah reminds us that this also occurs in the passage already quoted from Canticles. It was one of the three gifts presented by the Magi to the babe of Bethlehem, and is often mentioned in the Old Testament. Its Hebrew name is *Lebonah*, and the close resemblance of this word to the name Lebanon has led to the conjecture that the plant which yields Frankincense was first brought from Mt. Lebanon, whereas the truth seems rather to be that both Lebonah and Lebanon are derived from the same root *Laban* in reference to their whiteness. The gum or resin which was named Frankincense was used by the Jews for the preparation of incense, burned as a perfume, and placed on the shewbread and offering of meal. Much difficulty, however, has been experienced in the attempt to determine exactly to what plant the Frankincense owed its origin. Probably, like some other gums, it was obtained from more than one tree, or, to be more exact, the name was at different times, and by different people, given to different products. The Juniper, and more than one species of Pine, has yielded an exudation to which the name has been given, but perhaps the article which best merits the name is a product of one or other of the species of Boswellia, which belong to the Myrrh family or Amarydaceae. One species of this genus, named Boswellia Carteri, after its discoverer, was found during the last century in Arabia, and it is suggested that this may have been the source of the perfume taken by the Queen of Sheba to Solomon. Another name for Frankincense is Olibanum, which is produced by a Boswellia found in India. In modern times the gum is used, among other things, for the production of a sweet smell as incense in the Greek and Roman Catholic Churches. Though now regarded as an adjunct to worship, the original use of such perfumes and aromatics was to neutralize the smell arising from the sacrifices and abattoirs.

Myrrh was so named from its bitterness, recalling the waters of Marah. It occupies, like Frankincense, a large place in Scripture: was an ingredient in the sacred oil, was used as an unguent and a perfume, and burned as incense. It is mentioned in Canticles more frequently than any other perfume. The words "I will get me to the mountain of myrrh and to the hill of Frankincense" (Cant. IV, 6), may be a reference to the place where it is supposed to be gathered. Myrrh is an exudation from certain species of Cistus, a genus of plants which includes our Rock-rose; as well as from a small tree known as the Balsamodendron, found in rocky places and on limestone hills on the Somali coast of Africa. We are told that "the balsam exudes naturally from the stems and branches, but more abundantly from artificial incisions. It is a sticky, white gum, which soon hardens and is then collected," and conveyed to Bombay, whence it reaches this and other lands.

I cannot close this paper without a brief allusion to one other name found in our list of plants supposed to grow in the orchard of Pomegranates and the garden of herbs. Herodotus informs us that in his day Arabia was "the only region which produces Frankincense, myrrh, cassia, cinnamon, and ladanum. All these things the Arabians gather with great facility, myrrh only excepted: for though the trees which produce Frankincense are guarded by great numbers of flying serpents, yet the Arabians by burning stryax underneath drive them away with the smoke, and then gather the Frankincense from the trees." He then proceeds to describe the method of obtaining Cassia, and adds: "The manner of getting Cinnamon is yet more admirable. They can neither tell how nor in what region this aromatic is produced. Some pretend that it grows in those countries where Bacchus received his education; and from thence (say they) certain great birds bring those sticks which we from the Phoenicians call Cinnamon, to build their nests in mountainous cliffs inaccessible to man. The Arabians, to surmount this difficulty, cut large cattle into great pieces, and laying them down near the nests, retire to a distance. The birds descend, carrying up the pieces to their nests, which not being able to support so great a weight fall down to the ground. The Arabians then gather up the sticks, and by this means they and other nations are furnished with Cinnamon."

Herodotus in this passage (*Thalia* CXI) uses the word Cinnamon or *Kinnamonon*, and its origin is attributed to the Phoenicians. The same word is employed in Canticles (IV, 14) and in other passages in the Old Testament, but even to-day the exact history of the word cannot be traced. I therefore venture to submit that the first part of the word indicates that it is from China. Indeed, among the many names which the article bears in the East is that of Dar-sini or wood of Sinim. Now Sinim means China, and Cinnamon may therefore be simply China-wood. In support of this is the statement made by some authorities that the Cinnamon of the ancients was Cassia lignea or some related form, which was and still is obtained from South China, where the native name is Yuk-kwai. The name of the Cassia tree in Canton is Kwai, and the term Yuk is employed when anything of great value is designated. "From whatever source Cinnamon was obtained it appears thrice in the Old Testament among aromatic spices, and in Revelation (XVIII, 13) among the merchandise of the apocalyptic Babylon. Thus the Jews must have been tolerably familiar with it," though we cannot conclude from this that it literally grew in the garden of spices which the poet has in mind. Indeed, the whole passage quoted at the beginning of this paper is to be regarded figuratively rather than literally. *Hilderic Friend.*

THE ROSE GARDEN.

ROSE LADY F. STRONGE.

On the occasion of the National Rose Society's autumn show at Regent's Park on September 11 and 12, Messrs. Samuel McGredy and Son had many novelties on view and of these the variety Lady F. Stronge (Fig. 115) received a Certificate of Merit. The form of the flower both in the bud and when fully opened is excellent, and from the exhibited plants we should judge the variety as one of medium height and very free-flowering. The colour is a unique mixture of Apricot, pink and salmon, of a shade seldom met with in Roses. We venture to think this Rose is destined to take a high place among varieties especially suitable for garden decoration on account of its free and perpetual-flowering qualities.

ROSE RED PREMIER.

This new American Rose, a sport from Premier, is being advertised in the American trade papers as one of the most popular of Roses for forcing. The colour is described as carmine-red with velvety cardinal-red on the inner surface of the petals.

ORCHID NOTES AND GLEANINGS.

LAELIO-CATTLEYA EPIC.

A fine flower of this richly-coloured hybrid, raised between Laelio-Cattleya Epicasta (C. Warscewiczii × L. pumila) and C. Lord Rothschild (Dowiana × Gaskelliana), which flowered with the raisers, Messrs. Sanders, St. Albans, last year, shows well marked characters in form and colour. The broad and well displayed sepals and petals are of a bright vinous-purple tint and the lip ruby-purple. The firm substance of the flower, the shape of the broad petals and the more tubular base of the lip are interesting features inherited from Laelia pumila in L.-C. Epicasta.

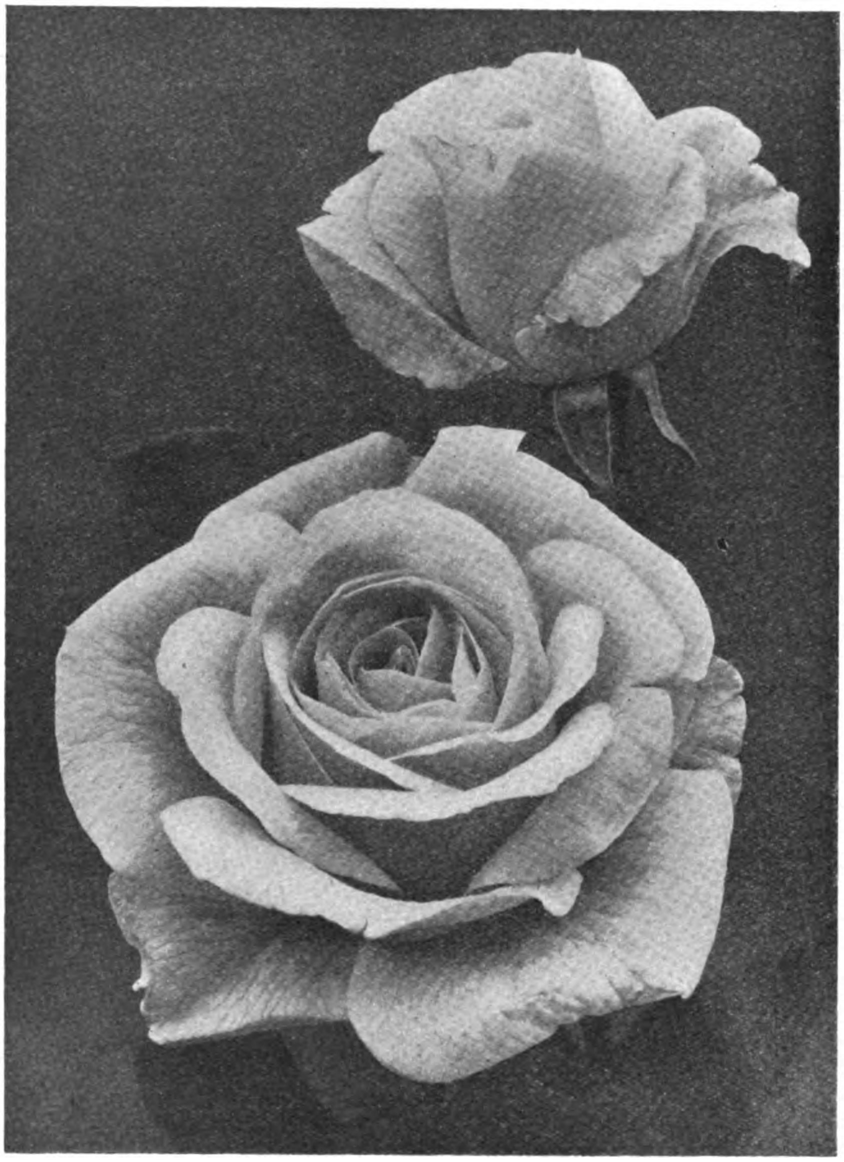


FIG. 115.—ROSE LADY F. STRONGE.

N.R.S. Certificate of Merit, September 11, 1924.

ORCHIDS AT KNIGHTSBRIDGE.

Messrs. Sanders, St. Albans, arranged a display of choice Orchids in the floral hall at Messrs. Harrod's Stores, Knightsbridge, London, on Monday, November 3. The specimens were beautifully arranged on a staging along one end of the hall, with a background of Palms, the group being a replica of one of the firm's recent Gold Medal exhibits at the Royal Horticultural Hall. In the centre was the new Brasso-Cattleya Sir Woodman Burbidge (B.-C. Cliftonii × C. Warscewiczii Sanderiana) of a lovely soft mauve-pink colour; there is a deep maroon stain on the labellum, with a pale lemon tinge on either side. A contrast, but equally beautiful, was the dainty Odontoglossum Goldcrest, pure white with deep lemon-yellow markings. Odontoglossum Harold (O. Jasper × O. eximium), deep pink, with maroon and yellow markings was conspicuous: and other remarkable specimens were of Odontoglossum Tagus (O. Othello × O. Doris), Brasso-Cattleya Pallas var. Grand Mogul, and two varieties of Cypripedium Cappamagna, named Victoria and J. Thrower.

CATTLEYA ORIENT.

A grand flower of this showy hybrid, which first appeared with Messrs. Armstrong and Brown in 1922, is sent by Mr. W. Sorrell, gardener to R. Gerrish, Esq., Milford Manor, Salisbury. Its parents are C. Adula (bicolor × Hardyana) and C. Venus (Dowiana × Iris). The flower is as large as that of C. Hardyana; the sepals and petals are salmon-pink with a gold shade, and the lip, which shows the influence of C. bicolor, rich Tyrian purple.

LILIUMS FROM SEEDS IN ONTARIO.

It is generally understood that the best way to grow difficult plants successfully is to raise them from seeds and this, I think, is certainly true of Liliums. When I first came to Canada in 1912 and went to the Ontario Agricultural College at Guelph, Professor J. W. Crow had just made a start on hybridizing Lilies and had a few seedlings of L. speciosum × L. tigrinum. These were given into my care and although these never grew to flowering size, we had some interesting results. L. Henryi seeded very freely and the seedlings grew rapidly, the rather heavy soil seeming to suit it exactly and large handsome clumps, seven or eight feet high, are growing in the borders. L. regale, also, was grown from seeds quite easily.

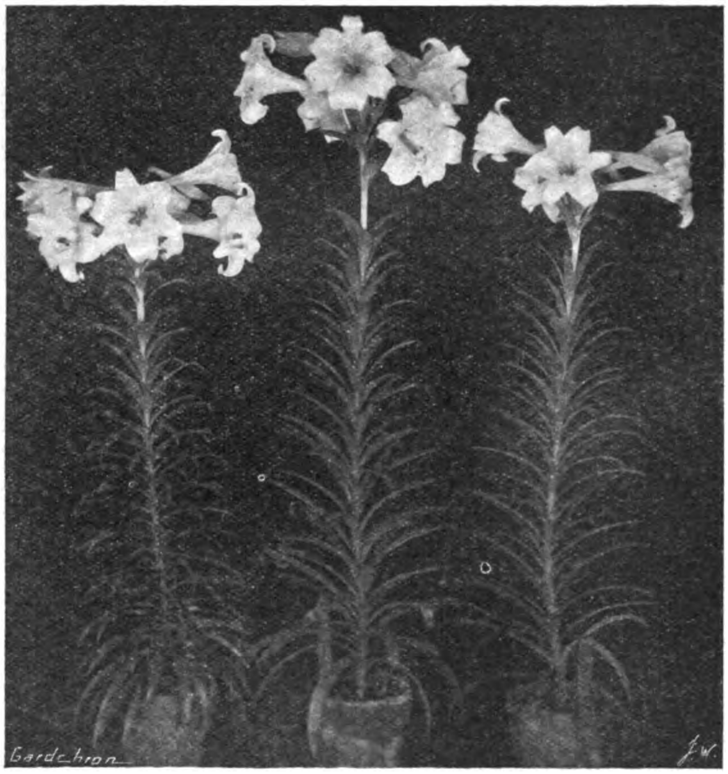


FIG. 116.—LILIUM LONGIFLORUM FORMOSUM.
Seeds sown October 18, 1921; plants photographed April 28, 1923.

Many crosses were made between different species but unfortunately many of them were lost during a severe winter. L. Henryi × L. speciosum roseum bloomed, but apparently the seedling was a true L. Henryi, which was the seed parent. L. croceum crossed with various named varieties of L. elegans gave some good colour variations.

The Lily which has recently been named L. George C. Creelman and recorded with the Canadian Council of Horticulture is a cross between L. Sargentiae and L. regale, the former being the seed parent. I understand that it is much larger than the average L. regale but otherwise the same. There are no bulbils in the axils of the leaves, but as I have not seen it myself, it is not possible for me to describe it. It seeds freely, and one of the seedlings which bloomed at Ottawa in 1923 is very handsome, with long, tubular flowers and the colouring of L. regale. It was only two years old and had four blooms, so probably it will be a good garden plant.

In 1920 I came to Ottawa and Mr. W. T. Macoun, the Dominion Horticulturist, encouraged me to continue my work with Liliums. He is always anxious to obtain new plants which will thrive in Canada. The Ottawa Farm is the chief of the Dominion Government's Experimental Farms system, and experimental work is done here and new plants and trees are tested and then distributed to the Branch Farms. The soil is light, the summers are very hot and the winters very cold, but as there is generally a deep covering of snow on the ground all the winter, many bulbous plants do well.

L. tenuifolium seeds very freely; our conditions seem to be ideal for this species. Seedlings bloom in the second year. L. monadelphum sets seed without artificial pollenation, but the seedlings are very slow growing. L. croceum sets a few seeds and a cross of L. dahuricum × L. umbellatum I made, bloomed in three years from seed. L. testaceum sets seed if pollinated with L. candidum or L. chalcedonicum. Some of these crosses should flower this summer.

L. superbum set some seed pods, but they contained very little good seed. I have not succeeded in crossing it with any other species. This Lilium grows well in the borders and it is a mistake to say that it needs a moist soil. L. sutchuenense and L. Willmottae both seed freely and seedlings of the former bloomed in two years. L. Maximowiczii only lived a short time. L. longiflorum is not hardy enough and soon dies out with us, but in 1921 a seed pod grew on the variety formosum which must have been self fertilized, as there was none other in the garden. This seed and some of L. longiflorum giganteum, which had been hand pollinated in the greenhouse, were sown on October 18, 1921, and on April 28, 1923, the photograph (Fig. 116) was taken. The seeds were sown in the greenhouse and the seedlings grown in a cold frame during the summer and potted up and put back into the greenhouse in the autumn. Several had single blooms while in the frame, and eight, out of the twenty potted, flowered in September and October, but those illustrated were the finest; the tallest was 24 inches high and had nine perfect blossoms. The variety giganteum was not so successful as the others.

In 1921, after many failures, I succeeded in obtaining seed on L. tigrinum and this last summer two of these crosses bloomed. The illustration (Fig. 117) is of L. tigrinum (female) × L. Maximowiczii; the plant was only two years old from seed, but two buds formed, one of which dropped off without opening. The plant was about ten inches high and resembled the seed parent except that there were no bulbils in the axils of the leaves.

L. tigrinum × L. Willmottae had two buds, one of which dropped off. The one that opened faced up, as seen in the illustration (Fig. 118) but I think that was probably due to some accidental cause. In other ways the plant was much the same as the other seedling. As these are both very young plants, it will be of interest to see how they will develop.

L. regale × L. longiflorum, and L. regale × L. speciosum rubrum, bloomed in 1923, two years from seed. No special notes were taken, but they appeared to be very like L. regale, the seed parent.

L. auratum is not very satisfactory. L. speciosum blooms so late in the season that it is frequently spoiled by the weather. L. Hansonii grows well in a partially shaded position, but bleaches in the hot sun. I am hoping this year to get seed on this species, as I think I have found pollen that will fertilize it.

These notes are on my work at Guelph and Ottawa, and results in other districts of Canada would propably be quite different. *Isabella Preston, Horticultural Division, Central Experimental Farm, Ottawa.*

RHODODENDRONS.

VI. Rhododendrons in the Garden.

(*Continued from page* 304).

Rhododendron hypoglaucum is also an uncertain quantity as regards size—anything from six to eighteen feet high, according to the conditions. The leaves are something like those of R. argyrophyllum with silvery-white felt beneath. The flowers are large, white, flushed with rose, dotted with darker pink and open in May.

Better—and more readily obtained—is R. niveum, a violet-flowered species from Sikkim. It grows twelve feet high and its flowers, all aglow against the sea-green foliage, open between March and May. This leaf-felt is found in many species belonging to series which have no near relationship, and is always attractive. Usually it is some shade of rusty red, but not uncommonly it is silver white, chocolate, or buff. Where the leaves are not too big (as in the "Falconeri" species), a draught of wind will flick over the leaves exposing the under surface and giving a most delightful effect; so that where possible, these species should be grown in the open, where they can be seen. Of the three species mentioned, R. niveum is the most attractive.

The "Thomsonii" series, which links on to the "Souliei" series, includes several fine species, none of which, however, rival R. Thomsonii itself. This gorgeous plant forms a fairly compact bush, six to ten feet high. The glabrous leaves, dark above, almost white below, are nearly orbicular and the glossy corollas are a deep blood red with a few almost black spots. It flowers in April to May in this country, and when in full bloom, is a sight worth seeing. The large, lemon-yellow calyx is a characteristic feature, and after the corollas have fallen the plant has almost the appearance of flowering again in a peculiar way of its own. R. Hookeri is very similar, but is a much rarer species in cultivation.

R. eclecteum—if obtainable—may be added, but certainly cannot be substituted for R. Thomsonii. It is a six-feet bush.

Two species of the section Roylei call for notice—R. Roylei itself and R. cinnabarinum, both from Sikkim.

R. Roylei forms a neat, evenly-branched, bushy shrub, six to ten feet high, and is worth growing for the beauty of its foliage alone. The leaves are glaucous green above, pale green, almost white below, giving an effect of foam-flecked sea when the wind blows. The flowers, too, are of unusual shape, narrow, tubular, pendent, and foggy crimson in colour. The whole effect is strange and beautiful.

R. cinnabarinum is very like it in appearance, except that the leaves are more smoky grey on the reverse and the flowers produced in May and June are a soft cinnamon-orange, tipped with crimson; or sometimes cinnabar-red.

The bristly Rhododendrons which centre round R. barbatum are trees with trusses of showy flowers, often blood-red as in R. barbatum itself. In R. habrotrichum the flowers are pale purplish rose. R. Smithii is very like R. barbatum, but said to be less affected by the weather when in April blossom. It is, therefore, to be preferred. R. barbatum, however, usually flowers in May. Then there is R. strigillosum, also with crimson flowers. Nobody wants the lot, however, and I would recommend R. Smithii and R. habrotrichum as a useful all-round pair, not too much alike.

R. habrotrichum only reaches ten or twelve feet, in its own land, and R. strigillosum is not much bigger. But R. barbatum is a full-fledged tree, twenty to thirty feet high.

R. campylocarpum is one of Sikkim's most precious gifts. It forms a neat bush six feet high. The glabrous leaves are a pleasant green, darker above than below, and the fragrant, sulphur-yellow flowers are borne in loose trusses of six to ten blooms. In its native country it flowers in June, but in England a month or two earlier.

R. callimorphum is a notable (and expensive) Chinese species allied to the last-named. It has rose-coloured flowers and grows six or eight feet high.

In the same breath may be mentioned some lovely species of the Fortunei series, namely R. Fortunei, R. oreodoxa, R. calophytum, R. discolor, R. sutchuenense and R. decorum. There are a couple of dozen more, most of them in cultivation, but the above six, all of them Chinese, will suffice to whet the appetite.

R. Fortunei is in many respects the finest Chinese Rhododendron extant. Also it is of historic interest. It grows twelve feet high, a small tree, bearing in May large blush-white flowers, fragrant like all of its kind. The corolla is seven-lobed.

R. oreodoxa is a loosely-knit shrub of six feet to ten feet, flowering early (and therefore to be commended). In March or April it is smothered in blossom, the carmine buds expanding into rosy bells.

R. calophytum must be included amongst the tree species, since it grows forty feet high. The flowers are rose-pink with a dark blotch, in large trusses, and the leaves, which in winter hang straight down, are a foot long. The hardiness of this species is unquestionable.

R. discolor is a big bush, six feet to eight feet high, and bears trusses of snow-white flowers, opening sometimes as late as July. If one's object is to have Rhododendrons at all costs, in season or out of season, this may be grown, although personally I consider midsummer Rhododendrons, midsummer madness. The habit of this species of breaking late is to be highly commended.

R. sutchuenense is a stout doer. It forms a bulky bush, eight feet to ten feet high bearing twenty-flowered trusses, which appear before the laggard leaves have had time to recover from their winter sloth. This gives to the plant in March, with its great snowballs of blush rose, darkly freckled flowers, from beneath which the curled leaves stream stiffly, a peculiar appearance. The species is remarkable for flowering in the nursery stage, when but two feet to three feet high.

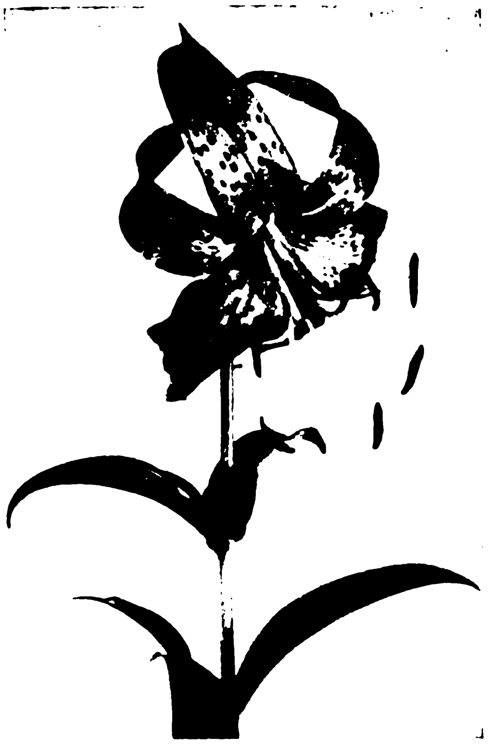


FIG. 117.—LILIUM TIGRINUM ♀ × L. MAXIMOWICZII ♂.

Two years from seed (see p. 320).

R. decorum varies from a compact six-foot shrub to a leggy fifteen-foot tree. The flowers are milk white or flushed pink and fragrant. It flowers moderately late, in May or even June.

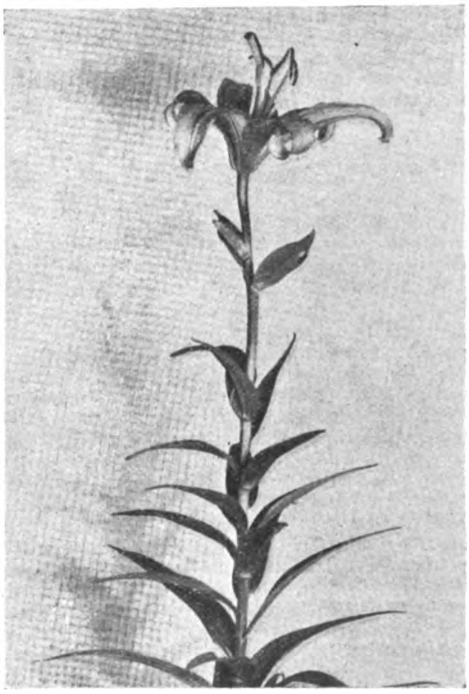


FIG. 118.—LILIUM TIGRINUM ♀ × WILLMOTTAE ♂.

Two years from seed (see p. 320).

The Souliei series is represented in cultivation by R. Wardii, R. Fargesii, R. Williamsianum, R. Souliei and others, showing a fine range of colour.

R. Souliei itself has campanulate flowers of a pale bluish-pink. It is a shrub five feet to ten feet high, but flowers at the tender age of five years, when much smaller. R. Wardii, on the other hand, is a slim tree, fifteen feet high, with Daffodil-yellow flowers and sometimes a crimson blotch at the base. It flowers in June. R. Fargesii flowers in April and has rose-pink flowers. Not one of these three can be said to be in general cultivation as yet; but they assuredly will be before long, for they are all beautiful. I have not the heart to ignore them altogether. R. Williamsianum is dealt with elsewhere.

R. orbiculare is another gem, all too rare in cultivation. It is a shrub up to ten feet high, remarkable for its almost circular dark green leaves. The flowers are rosy red to almost carmine and they appear in April. It is a plant for the wetter and warmer parts of the country. These plants of the "Campylocarpum," "Souliei," and "Thomsonii" series may be recognised by their rounded leaves, without hairs or scales, almost white below; and loose trusses with bell-shaped, more or less nodding flowers. They are bushy shrubs and scraggy trees.

R. auriculatum is the "big noise" in the Rhododendron world—that and R. Fortunei. It seems to be the Chinese representative of the Himalayan R. Griffithianum; but the latter is not everywhere hardy, whereas R. auriculatum, which flowers in August and expands its young leaves in September, is. The leaves are of large size, up to twelve or fifteen inches in length, more or less oblong, eared at the base (a character unique in the genus), leathery and glabrous. The plant itself is said to reach the dimensions of a tree, thirty feet high in nature, but so far it has not exceeded the moderate height of ten or fifteen feet in this country. The fragrant flowers are white or pink and as big as a muffin man's bell. The very late breaking and flowering of this species make it of exceptional interest and value as a parent in hybridisation, apart from its obvious merits as a garden plant. Nevertheless a Rhododendron flowering in August looks as posthumous as a Rose at Christmas.

R. Griffithianum (or R. Aucklandii, which is the same thing) is so splendid a plant that one must mention it by name, if with bated breath. It has the largest flowers of any known species—pure white trumpets a foot long and six inches across at the mouth, distilling fragrance. In the Himalaya it grows to a forty-feet tree, but in this country it does not exceed the dimensions of a big shrub, a dozen or fifteen feet high. The pale green, glabrous leaves, as much as twelve or fifteen inches long, are linear-oval and like the rest of the plant, quite distinctive. The huge trusses are graceful and loose. Considering the magnificence and rarity of the species, it can hardly be considered expensive for half-a-guinea for a sapling old enough to flower with luck—in a few years time. The famous R. Loderi is a Griffithianum-Fortunei cross. Lastly, there are the tree Rhododendrons.

Big trees will appeal as little as scrubby species to those for whom this notes are primarily written. A garden plot is scarcely the place for a tree thirty or forty feet high, not to mention the expense and anxiety involved. Nevertheless, these are the Rhododendrons par excellence. When the profane think of Rhododendrons they think of trees. Hooker's *Himalayan Journal*, a classic which everyone interested in the genus should read, refers to them as forest trees; and certainly most folk so regard them. *F. Kingdon Ward.*

(*To be continued*).

NOTICES OF BOOKS.

Hardy Bulbs for Amateurs.

It was about thirteen years ago that Mr· Jacob gave us two admirable books on bulbs—one dealing exclusively with the Daffodil, the other with the Tulip. Before and since that time he has been a frequent contributor to the horticultural press on bulb matters, and to those who have followed his writings his recent book* contains little that is new, either in historical details or practical advice. To those, however, who know nothing of hardy bulbs and of their treatment—and it is for such the' book is intended—the new work will prove a boon, for it is written in a refreshing style, and while it is obvious that a small and inexpensive publication dealing with so vast a subject from one whose knowledge of bulbs is wide, cannot contain everything we should like to see, Mr. Jacob realises his omissions. In fact criticism on this point is disarmed in advance for it is stated in the opening chapter that certain "omissions have been made to keep the book a reasonable size and a low price." The concluding chapter is also devoted to a miscellany of bulbous plants under the heading of "Omissions," which have not been dealt with in the book proper; "Addenda" would have been a better title.

The term "hardy bulb" in the horticultural sense is used very loosely; the author admits corms under this category, and definitely excludes rhizomatous and tuberous-rooted plants, with the exception, in the latter class, of the Winter Aconite and the Turban Ranunculus, for whose inclusion a special plea is made. Lilies are entirely disregarded owing to the vastness of this family, and plants of doubtful hardiness are not included, consequently the Gladiolus and others find no place.

The Narcissus and the Tulip, considering the size of the book, receive liberal attention. Historical notes, classification, cultural hints, and choice of varieties for special locations and purposes are all dealt with, and the practical advice is very sound. It is an easy matter to criticise a list of some dozen or so varieties selected for a particular purpose when the choice has to be made from thousands of varieties. Everyone has favourites, but in spite of this, it comes as a surprise to see no mention of Sir Watkin surely one of the most serviceable of the inexpensive varieties—in Mr. Jacob's selection of Daffodils for beds and borders. Again, the double varieties are totally disregarded in all the lists, yet there are many who prefer a double flower to a single one.

A word of warning, we think, is desirable to people who enjoy seeing two or three varieties of Tulips in one bed. Often this is attempted, and more often than not the result is discouraging, not because the colour scheme is distasteful, but that a choice is frequently made of varieties which do not flower at exactly the same time. Pride of Haarlem and Inglescombe Yellow we once saw employed together in a large bed, and had the varieties flowered together we could well imagine that the effect would have been very pleasing. But Pride of Haarlem had dropped its petals before Inglescombe Yellow showed its colour.

Hyacinths, Crocuses, Scillas, Irises, Camassias, Chionodoxas, Colchicums, Brodiaeas, and many other bulbous plants are dealt with, and to every one a chapter is devoted; but many of the chapters are very short and do not consist of more than a few hundred words. This arrangement has necessarily meant the waste of a great deal of space; page 83, for instance, has but seventeen words of text, and numbers of pages are only a quarter or half filled. We mention this because the author has been so apologetic about his omissions, yet with six totally blank pages at the back of the book and another six or so wasted, he would have had at least a dozen pages at his disposal for a short treatise on the Lilies or something equally as interesting.

Nevertheless, Mr. Jacob has achieved what he has undertaken to do, and his style is such that the reader does not weary of it so readily as is the custom with the bulk of gardening books written specially for the amateur.

REMARKS ON THE CONDITION OF THE FRUIT CROPS.

(See Tables and Summaries, Ante, pp. 78-84).
(*Concluded from p.* 287).

WALES.

DENBIGHSHIRE.—Apples and Pears are very promising crops. Plums were very scarce. Bush fruits were good, especially Black Currants and Raspberries. All fruit trees are exceptionally clean this season. *F. C. Puddle, Bodnant Gardens, Tal-y-Cafn.*

GLAMORGANSHIRE.—The fruit crops generally in these gardens are of a fair average yield. Apples of most kinds are good crops, but many of the fruits dropped owing to continual wet and cold winds in late spring. Pears and Plums are light crops owing, no doubt, to the unfavourable autumn of 1923, as very few blossom buds formed on most trees. Cherries were a good crop, both on standards and wall trees, and the fruit was of good quality. Gooseberries were not plentiful but of excellent quality. Raspberries were a heavy crop of first-class fruits. Strawberries Royal Sovereign and King George were very plentiful and the berries were of large size and good quality, but many decayed through the excessive rains. Currants and other small fruits were good average crops. Our soil is a heavy loam overlying lime stone. *W. E. Wright, Hentstaff Court Gardens, Pontyclun.*

——The Apple crop is very disappointing. The trees were covered with bloom, but, owing to the continued wet weather and low temperature at the time, the flowers failed to set. The varieties carrying the best crops are James Grieve, Charles Ross Worcester Pearmain and Lord Grosvenor. Pears are below the average. Morello Cherries were very good, but sweet Cherries were a failure. Of Gooseberries we had an enormous crop, and other bush fruits were also good. Strawberries were an average crop. *C. T. Warmington, Penllergaer Gardens, Swansea.*

IRELAND.

KILKENNY.—The fruit crops are very variable in amount, though the quality is, in most instances, good. March and April were two exceptional months and fruit of every kind promised well; the latter part of April was, however, very wet and cold, with frost at nights. The Gooseberry crop was ruined, and later, American-mildew appeared on the bushes. Frost in April and May did much damage to the fruit blossom and the trouble was accentuated by the cold north winds; the consequence was that the Plum crop was practically a failure, and Pears also are scarce. A few of the most profitable varieties of the latter fruit are Beurré Diel, Marguerite Marillat, Beurré d'Amanlis, William's Bon Chrétien and Dr. Jules Guyot. Apples are an average crop, although irregular in yield, some trees being heavily laden whilst others are barren of fruit, or nearly so. Young trees are carrying the heaviest crops. The most profitable amongst them are Irish Peach, Early Rivers, Stirling Castle, Newton Wonder, King of the Pippins, Devonshire Quarrenden, Beauty of Bath, Bramley's Seedling, Lady Sudeley, Alfriston, American Mother and Early Victoria. Small fruits were on the whole fairly good. Currants and Strawberries were extra plentitful. The soil here is a heavy clay over limestone, and is very difficult to cultivate in a wet season. *John Wm. Graham, Flood Hall Gardens, Thomastown.*

——All kinds of fruit trees blossomed profusely, but the crops generally are most disappointing, the more so because the late date of flowering favoured a good set. Morello Cherries, for instance, were quite a full month later than usual in flowering, yet the crop was light, and the same is true of Pears, which apparently set freely but dropped at the end of May. The entire absence of bees in this district probably accounts for a good deal of fruit dropping. All the bees for miles around perished with Isle of Wight disease in 1922. Bullfinches also were particularly troublesome and numerous in January and February, and they played havoc with Plums, Pears and dessert Apples in the absence of a weapon to combat these pests. The season has been the most unfavourable I have known for years, while frosts occurred nearly every morning in April and well on into the month of May. June was dull and cold, and July showed no improvement. As a consequence of the unfavourable climatic conditions fungous diseases have been very prevalent. *T. E. Tomalin, Bessborough Gardens, Piltown.*

——All fruit trees and bushes flowered well, and in general appearance were very promising. But May was a very wet month and the pollen was not dispersed by the wind. I think the continuous rains prevented the fruits setting. Frosts were not the cause of the failure. Grenadier, Worcester Pearmain, Mére de Ménage, Royal Jubilee, Lord Derby and Bramley's Seedling Apples are amongst those bearing the best crops here this year. *Henry Hall, Shankhill Castle Gardens.*

TYRONE.—The fruit crops are somewhat disappointing. There was an abundance of blossom, followed by an apparently satisfactory set, but Pears, Plums and Cherries dropped wholesale when about the size of small Peas, in many cases the entire crop falling. Apples are more satisfactory, though Cox's Orange Pippin and one or two other good dessert varieties are scarce, and all are late. Small fruits were good, Black Currants being a heavy crop, and Gooseberries a good average crop of extra fine quality. Strawberries yielded well but were very late, and many of the best fruits either rotted or were eaten by snails and slugs, which have been very troublesome to all crops this year. *Fred. W. Walker, Sion House Gardens, Sion Hills.*

CO. DOWN.—The fruit crops this season are most disappointing. There was an unusual amount of blossom, but only in a few instances have we an average crop of fruit. Pears alone are satisfactory. The Apple crop is the worst ever recorded, and Strawberries damped off in quantity. The grey skies, the absence of sunshine, and the heavy rainfall, following the wet autumn of 1923, have been followed by mildew in all its forms. *T. W. Bolas, Mount Stewart, Newtownards.*

CORK.—The failure of the Apple crop appears to be fairly general throughout the South of Ireland. Pears and Plums are also below average. To a great extent this is undoubtedly due to the cold, wet, and sunless weather during April, May, and June. Charles Ross, Worcester Pearmain, and the Queen appear to be the best cropped varieties amongst Apples. Gooseberries were below the average yield and the berries undersized. Strawberries promised a good crop, but as a result of the constant rains and cold nights the fruits ripened slowly and were of poor flavour. Raspberries, Loganberries, and Black Currants were very good crops. Gooseberry sawfly and caterpillars have been very prevalent this season. So far, 1924 will be remembered as one of the

---

**Hardy Bulbs for Amateurs.* By the Rev. J. Jacob. pp. 108. Country Life, Ltd., 20, Tavistock Street, W.C. Price 5/- net.

coldest and wettest seasons on record. *J. Dearnaby, 17, St. Patrick's Terrace, Magazine Road.*

Meath.—We have had one of the very worst crops of fruit I remember. There was almost no Plum blossom, although the weather was very dry at the time of the trees blooming. Apple trees produced such a large crop of blossom that the boughs were wreathed in flowers, yet by the end of May all the fruits had fallen from the trees. The foliage is very much burned up in appearance. We have had practically no sunshine since early May and far too much rain. The soil has never been dry or warm for the past ten weeks. *Michael M'Keown, Fruit Grower and Pulp Manufacturer, Julianstown.*

CHANNEL ISLANDS.

Guernsey.—The season started well for fruit with very prolific flowering, but after the fruits set we had heavy and frequent winds, which did much damage. Our sub-soil has been extremely dry this summer and this has caused a very large quantity of fruit to drop. *Chas. Smith and Son, Caledonia Nursery.*

Jersey.—The spring promise of all hardy fruits was good, the blossom being abundant and strong. This promise has not been maintained, and generally the crops will be below the average. A week of fine weather at Easter was preceded and followed by a long spell of very unfavourable conditions for flowering, which was ten days later than usual here. With me Apples are average to good, the best cropped sorts being James Grieve, Chas. Ross, Ellison's Orange and Christmas Pearmain. Good culinary sorts are Bramley's Seedling, Peasgood's Nonesuch and Norfolk Beauty. *Jas. Harper, Springfield Nursery, St. Heliers.*

——The fruit crops in this district are very poor generally; small fruits were a fair average yield, but the Plums, Cherries and some sorts of Apples are very scarce. Pears are perhaps the best of the crops but they are not good. I think the failure is due to the cold, wet spring, when we also experienced very cold winds. *Thomas Sharman, The Imperial Nursery, St. Mark's Road, St. Heliers.*

HARDY FRUIT GARDEN.

AN OLD-FASHIONED DESSERT APPLE REINETTE VAN MONS.

There has been growing in the orchard here for a number of years a large standard dessert Apple tree which has borne the name of Lemon Pippin. How it got this name I cannot say, but ever since I can recollect it has been referred to as such. It fruits well, perhaps not every year, but at least every alternate year, as is the wont of old orchard trees. It has produced this autumn a liberal crop of Apples, of a good size and fully matured. Considering what an unfavourable summer it has been for ripening fruits generally this tree has been an agreeable surprise. The variety can therefore be recommended as a dessert Apple for the cool North-West, where the best eating Apples, such as Ribston Pippin and Cox's Orange Pippin, rarely mature sufficiently well except on a wall. A dessert Apple that will ripen its fruits on standard trees in such a cold and sunless summer is thus worthy of some consideration.

A few years ago I endeavoured to get this Apple named. A local nurseryman thought it might be Yellow Ingestre. This did not satisfy me. *The Gardeners' Chronicle* has now kindly identified it as Reinette van Mons.

For a dessert variety the Apple is medium to large in size, somewhat columnar in shape, greenish-yellow in colour, with the sunny side golden on well exposed fruits. It is quite a sweet Apple, full of aroma, crisp and well flavoured, but rather lacks sharpness. It is never tough or woody. It is best during October and November. By December it softens and loses its briskness, but is even then not to be despised by those who like or can only manage a soft, raw Apple. One good feature about it is the smallness of its core. Should anyone be particularly interested in this old Apple I could still spare a fruit or two. *J. Parkin, Blaithwaite, Wigton, Cumberland.*

FRUITS SUITABLE FOR PLANTING IN A NORTH ASPECT.

Many an odd and neglected wall space, facing North-East or North may be utilised very profitably by planting certain kinds of fruit trees, including Morello Cherries, Plums, Pears, Currants, Gooseberries, and even Apples.

Undoubtedly double cordons are the best type of tree for this purpose, as their growth may be easily curtailed and the trees encouraged to form early fruiting spurs.

Six varieties of Pears to be recommended for north aspects are Winter Nelis, Triomphe de Vienne, Olivier des Serres, Le Lectier, Conference, as a pollinator, and Catillac. The best sorts of Plums are River's Early Prolific, Monarch, Heron, Gisborne's, Late Orange, and Czar.

Of Apples choose Byford Wonder, Bramley's Seedling, Grenadier, Tower of Glamis, Gloria Mundi, and Alfriston.

Any variety of Red or White Currant and most sorts of Gooseberries will succeed; Keepsake, Whinham's Industry, and Sir George Brown are three excellent Gooseberries for the purpose.

The borders should be well drained and the soil sweet, adding a liberal quantity of lime at the time of planting and annually afterwards. Owing to the shady conditions of the border the soil will soon show signs of acidity, and this must be corrected by the free use of lime. *Pomona.*

VEGETABLE GARDEN.

MANGE-TOUT.

The appeal to me for a note on this subject becomes more imperative from the letter signed *C. H. P.*, as this correspondent does not quite grasp the situation. I will refer to two, probably unimpeachable, authorities—the lexicographer Littré and the horticulturists Vilmorin-Andrieux. Littré gives the word under two headings, both nouns masculine and plural *des mange-tout*; first, the figurative meaning as prodigal or spendthrift, which, perhaps, almost amounts to a slang origin—at any rate colloquial—may be left on one side. We are concerned with the second meaning, "Pois et Haricots cultivés dont on mange les cosses vertes *avec le grain tout formé*" (the italics are mine) that is "Cultivated varieties of Peas and Beans of which the pods are eaten with the *seeds fully developed*." Vilmorin-Andrieux (who omit the hyphen) classifies Peas and Beans under the two headings: (i) *Haricots et Pois à écosser ou à parchemin*" (in the case of beans, often listed as "flageolets"); and (ii) *Haricots et pois mangetout ou à parchemin*," that is, (i) to pod out or whose pod develope tough (coriace) or hard membrane, and (ii) the "eat alls," or those without this membrane or parchment. Since they wrote, a further improvement and selection has led to the division of the Mange-tout class into (a) those with threads; (b) those without threads or strings (*sans fils, zonder draade*, etc.); that is to say, amongst Beans, for I still await the advent of a Mange-tout Pea without strings. *C. H. P.* mentions the scarlet runner as a Mange-tout! As a fact, it is almost, perhaps, the quintessence of what is *not* a Mange-tout; and I should much like to see him tackling a dish of these cooked whole (after removal of string) when the seeds are fully formed! It is no doubt from the want of enterprise and progress of our gardeners that, in this country, Beans are still cut up before cooking; when so treated the fine different flavours are lost, and it becomes impossible, with eyes shut or open to tell whether one is eating a Predome, a Perfect, or what we call Dunelm Selected—the loss is gastronomic:—"The Bean within the dishes rim, some much-chopped Bean it was to him; And it was nothing more"!

It is now many years since that I made endeavour to get the Royal Horticultural Society to classify Beans when staged; perhaps the day will yet come when Flageolet, and Mange-tout with string and Mange-tout without string will be severely distinguished. Exhibits would then each contain semi- or three-quarter mature pods together with some in which the seeds had reached full size. It was written many years ago that as there were so many good Marrowfats it was not worth growing the old round Pea; this I would paraphrase, saying "as there are so many stringed and stringless Mange-touts, why grow the parchmenty sorts except for shelling out"? Continental seedsmen's lists have the two classes separated—why not ours?

Truly, any Bean, and perhaps any Pea, may be eaten whole if gathered young enough, but look at the wastage that occurs if the pods are not gathered betimes; moreover, the more developed the grains the better is the food value.

I have tried many Mange-tout sorts both of Peas and of Beans from many sources; the late Mr. Rabjohn, once a contributor to these columns, used to send me his *dernier cri* of Mange-tout Peas and Beans from time to time, leading to a return of the compliment; at present, our fancy for Beans lies with Dunelm Selected and van Tubergen's Perfect for dwarfs, and Vilmorin's Climbing Mange-tout for climbers, though we have others about, and year by year try other "new" sorts. It may be remarked that Beans come very fairly true from home-saved seed, though here and there a parchmenty rogue appears and here and there a runner amongst the dwarfs. For Mange-tout Peas our fancy centres on a metre-high strain of Vilmorin's "*à très large cosse*," which apparently has gone out of the lists, the pods of which are truly enormous and tender. I know of no better breakfast dish for those who like over-remaining Peas, Beans, or Broad Beans "tossed" in the fat of the morning breakfast bacon (for which, alas, boraxy, creosoted pork often figures) than such a variety. The Little Breton, with its small but abundant pods, is also a good sort and, as I think, preferable to many recently-tried sorts.

If I am not taking too much space, it may be added that it seems unusual for the first batch of Mange-tout Peas to breed, or be, true; there is a number, more or less, of rogues with parchmenty pods; with a little care these may be eliminated, for the shape of pod of the parchmenty ones can be recognised fairly early, and when ripe the uncanny, flabby, often sticky, shrunken pods of the good ones are easily separated from the stiff, uncontracted pods of the rogues. Once cleaned up, however, the strain remains good, and I think I may say without error that for the last ten years my strain of the half-high Grande Cosse has remained perfectly true without a single rogue.

I have not done much with seed saving from podding-out Peas, but it would seem that they too are apt to rogue quite perceptibly, and careful selection is needed to keep them true to type.

Perhaps I may add a word of warning in regard to Mange-tout Peas; their pods being soft and succulent are very attractive to the birds, and especially if seed is to be saved it is essential that netting protection is given betimes. With podding Peas I find that it pays only to grow sorts which have a thick hard pod, as these escape to a greater degree than softer and thinner podded varieties. *H. E. Durham.*

HOME CORRESPONDENCE,

[*The Editors do not hold themselves responsible for the opinions expressed by correspondents.*]

Potato Sharpe's Express.—I am obliged to Mr. Ruse (p. 270) for his congratulations on our heavy crop of Sharpe's Express Potato. As he desires information, he may be interested to learn that our district is in north Essex, bordering on Hertfordshire. Fifty years ago, so I am told, when the garden was planned, the soil was stiff clay, more suitable for brickmaking than gardening, but by continually working it and incorporating good farmyard manure, bonfire ash and lime, its texture has been improved. I collect all the stable manure possible for the soil. The Potatos in question were grown in a walled-in garden on ground previously cropped with Cauliflowers; when the site was dug, all refuse from the crop was turned in. No special preparation was given and no artificial manure used for the Potatos. *A. P.*

The Germinating Power of Seeds.—With reference to your leading article on October 4, p. 227, and Sir Herbert Maxwell's note in your issue of October 18, p. 269, regarding the germinating power of seeds, your readers may be interested to know that this year my employer handed me a packet of seeds of Canna indica. These seeds, with various others, had been in a drawer for a number of years, indeed, the packet was marked 1873. One seed germinated, and we now have a strong plant as a result. There were numerous Melon seeds of approximately the same date, but none of these germinated. The lady who collected the seeds died last year at a great age, and the seeds were found after her death. *W. R. Powell, Newton Park Gardens, Burton-on-Trent.*

Salvia Greggii as a Wall Plant.—This plant, described by Nicholson as a greenhouse shrub, appears to possess unsuspected powers of hardiness. A rooted cutting, planted two years ago on a south wall, now spreads its graceful arching branches over a space of more than two yards. In this situation it begins to flower in July and continues in blossom until October. The brilliant carmine flowers against grey stone are very effective, and in-as-much-as S. Greggii is easily raised from cuttings, those who delight in vivid colours might well give it a trial in a similar situation. *F. W. K.*

The Hardy Fruit Crops in the Evesham District.—*Market Grower*, on p. 271, has an interesting reference to Scab disease. Here, in the Evesham district, this complaint has been unusally prevalent this season. Pears, of which we had a crop of over five tons, are badly affected, establishing the fact that in their present state carbolineum-washes are useless for the prevention of this fungous disease. Varieties that were badly affected are William's Bon Chrétien in grass orchard and Beurré Hardy in the garden. On the contrary, Butter Pear, Conference, Louise Bonne of Jersey, Hessle and Beurré Diel, all growing in grass, and Pitmaston Duchess, Comte de Lamy, Doyenné du Comice and Josephine de Malines in the garden, all had crops of clean, sound fruit. Apples badly affected were Worcester Pearmain, Blenheim Pippin, King of the Pippins, and Malster, which is a fine dual-purpose Apple; also one that is naturally sweet when cooked. Newton Wonder, Dumelow's Seedling, Northern Greening, Tower of Glamis, and Lady Henniker are all clean. Plums, especially the variety Victoria, were a good paying crop, and proved the value of being picked over several times to secure the best fruits; in fact, the fruits of the final picking were equal to those gathered first. Our crop the Plum was over a ton. Peaches out-of-doors have been a good crop of clean, even fruit, but poor in flavour. The varieties in order of ripening were Early York, Dr. Hogg, Royal George and Noblesse. *Geo. H. Emmett, Evesham.*

SOCIETIES.

ROYAL HORTICULTURAL.

November 4.—There was a decided falling off in the number of exhibitors at the fortnightly meeting held at Vincent Square on the above date. Nevertheless, there were many fine exhibits and three gold medals were awarded, one by the Floral Committee to Messrs. H. J. Jones, Ltd., for Chrysanthemums, and two by the Fruit and Vegetable Committee to Sir Charles Nall-Cain for a display of Apples and Pears, and to Messrs. Dobbie and Co. for a collection of Potatos respectively.

Orchid Committee.

Present: C. J. Lucas, Esq. (in the chair), Gurney Wilson (Secretary), James O'Brien, Arthur Dye, S. W. Flory, H. G. Alexander, W. H. Hatcher, A. A. McBean, John C. Cowan, Frederick J. Hanbury, J. Wilson Potter, H. T. Pitt, and Chas H. Curtis.

First-Class Certificates.

Laelio-Cattleya Lustrissima, Westonbirt variety (*C. Warscewiczii* × *L.-C. Lustre*).—From Lt.-Col. Sir Geo. L. Holford, C.I.E., K.C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander). One of the finest of the Westonbirt Laelio-Cattleyas, showing the object at Westonbirt of retaining the true, large-flowered Cattleya form with the improvements in colour to be obtained through the Laelia ancestry. The superb plant bore two grand flowers each over eight inches across, all the segments being broad and well displayed. The sepals and petals are bright rosy-mauve: the very broad and well-displayed lip is ruby-purple with thin gold lines radiating from the base to the centre.

Vuylstekeara Aspasia var. polysticta (*Miltonia Charlesworthii* × *Odontioda Charlesworthii*).—From Messrs. Charlesworth and Co. The second variety of this remarkable cross to receive the highest award. The finely-grown plant bore a spike of six well-formed flowers, the broad segments of which overlapped. The sepals and petals are dark crimson, the rotund lip being crimson at the base and the front lobe blush-white, densely spotted with rose-purple.

Awards of Merit.

Miltonia Beau Brummel var. Aureole (*Venus* × *Bleuana Reine Elisabeth*).—From Messrs. Charlesworth and Co. A perfect Miltonia with blush-white sepals and petals blush tinged with purple. The lip is broad and round, blush-white, with dark crimson mask at the base, from which radiate heavy lines of the same colour.

Laelio-Cattleya Hassalli var. Supreme.—From Messrs. J. and A. McBean, Cooksbridge. This fine cross with C. Warscewiczii Frau M. Beyrodt is a flower of the most perfect shape, a quality, together with the white sepals and petals, derived from the parent. The plant had two large flowers and is one of the best of its class. The sepals and petals are pure white, the lip deep Tyrian-purple in front, this colour extending to the margins of the side lobes.

Cattleya Wembley (*Peetersii* × *Alexandra*).—From Messrs. Flory and Black, Slough. The sepals and petals are purplish-mauve; the lip broad, and coloured claret-crimson with gold lines from the base.

Groups.

Messrs. Cowan and Co., Southgate, were awarded a Silver Banksian Medal for a pretty group of finely-grown hybrids. At the back of the group were good Oncidium varicosum. Miltonia Bleuana varieties and showy Odontoglossums. Among white Cattleyas were the new C. Vesta (Snowdrop × Lady Veitch), a charming pure white variety; C. Lady Veitch and others. The best of the yellows were C. Sybyl and L.-C. luminosa aurea. The finest coloured forms were varieties of C. Daedalus and C. Hardyana, both raised at Southgate. Among a good selection of Cypripediums the handsome C. Gurkha, with Primrose dorsal sepal and blackish centre, was very prominent.

Messrs. Stuart Low and co., Bush Hill Park and Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for an attractive group of handsome Laelio-Cattleyas, Cattleyas and Odontoglossums. Among plants of special interest were a good example of the true Cattleya Dowiana Rosita and the richly coloured Sophro-Laelio-Cattleya Apache.

Messrs. J. and A. McBean, Cooksbridge, showed a selection of fine hybrids, including Lealio-Cattleya Linda var. Aureola, the first yellow form of their famous cross which varies considerably, but is always beautiful. Among the Cypripediums were the yellow C. insigne Sanderae and two plants of their C. insigne Royalty, a flower of clear yellow colour without spotting on the dorsal sepal. C. insigne Monarch is a fine representation of the darker class, having large blackish spotting on the dorsal sepal.

Messrs. Flory and Black, Slough, showed a selection of rare hybrids, including Brasso-Cattleya Alderman perfecta (B.-C. Nestor × C. Dowiana) of fine size and bright mauve-purple in colour; and B.-C. Juliet, Langley variety (C. chocoensis alba × B.-C. Mrs. J. Leemann), a clear white variety of good shape. A notable Cypripedium in this exhibit was C. Fantasia (Cyclops × Christopher), a large and finely formed flower.

Leonard Dixon, Esq., St. Albans, showed Cattleya Mrs. Gratrix, a good clear white variety of the true C. labiata form.

Miss Hilda M. Coley, Epworth, Reigate, showed a number of well executed paintings of Orchids.

Floral Committee.

Section A. *Present:* Messrs. H. B. May (in the Chair), J. F. McLeod, Arthur Turner, Donald Allan, Hugh Dickson, J. M. Bridgeford, M. C. Allwood, W. Howe, J. B. Riding, W. H. Page, W. B. Gingell, D. B. Crane, Chas. E. Pearson and W. D. Cartwright, Sec.

Section B. *Present:* Mr. Gerald W. Loder (in the Chair), Sir W. Lawrence and Messrs. J. Hudson, G. Reuthe, W. B. Cranfield, A. Bedford, G. Yeld, T. Hay, F. G. Preston, R. C. Notcutt, W. J. Bean, E. A. Bowles, Reginald Cory, R. D. Trotter, and Amos Perry.

First-Class Certificate.

Callicarpa Giraldiana.—A western Chinese species closely allied to C. formosana and C. japonica. The rose-purple flowers are followed with round, violet-purple berries, which are borne in clusters of about a dozen. Shown by Messrs. Waterer, Sons and Crisp, Ltd., Twyford.

Awards of Merit.

Carnation Lady Hindlip.—This is an exceedingly pretty flaked perpetual-flowering Carnation of good shape and texture. The ground colour is white richly pencilled with scarlet. Shown by Messrs. Stuart Low and Co.

Chrysanthemum Sheila.—A large single flower of excellent form and of rich crimson scarlet colour.

Chrysanthemum Mr. Thos. W. Pockett.—A large-flowered seedling Japanese variety, with rose-pink florets, the reverse side of which are a silvery-pink.

Chrysanthemum T. Slack.—The colour of this choice Japanese variety is chestnut-red with buff reverse. This and the two above varieties were shown by Messrs. Keith Luxford and Co., Harlow.

Chrysanthemum Harmony.—A decorative variety and one which should prove very valuable for market work. The colour is bright orange-red, the central florets being conspicuously tinged with yellow.

Chrysanthemum Salmon Queen.—Another decorative variety of a unique shade of salmon-buff colour. The flower is very large and well formed. This and the above variety were shown by Mr. H. Shoesmith, Guildford.

Chrysanthemum Gorgeous.—This is a very striking single flower of bright scarlet-crimson colour without shading. Shown by Messrs. Godfrey and Son, Exmouth, Devon.

Cotoneaster glaucophylla.—A very handsome half-evergreen shrub with elliptic to ovate-oblong, glabrous leaves, greyish-green beneath. The branches were well studded with red, globose-ovoid fruits, one-third-inch long and possessing two stones. Shown by Mr. Charles Eley, East Bergoht Place, Suffolk.

Dianella tasmanica.—A Liliaceous rhizomatous plant with bright purplish-blue fruits borne on slender pedicels. The plant was shown under the above name which needs verifying.

Billardiera longiflora.—A tender Australian shrub, the fruits of which are borne solitarily on slender pedicels. They are about three-quarter-inch long, and of a vivid purple colour. The leaves are entire and lanceolate.

Lonicera ligustrina yunnanense.—This Chinese shrub resembles L. nitida in foliage, and like it is evergreen. The purple, fleshy berries set closely upon the main branches render it a very desirable and attractive shrub. This and the above two plants were shown by Col. Stephenson R. Clarke, C.B., Cuckfield, Sussex.

Polystichum angulare falcatum No. 1.—This handsome Fern was raised from P. a. falcatum tripinnatum, which in turn was raised from P. a. falcatum Moly's variety—a wild find. The plant exhibited is one of a series from which twenty or so distinct forms have been selected. The fronds are large and very graceful.

Polystichum angulare divisilobum laxum.—A beautiful form raised from P. a. d. laxum (Jones and Fox), and on which it is a considerable improvement. The plant is of robust growth with feathery lax fronds of a medium green shade. This and the above plant were shown by Mr. W. B. Cranfield, Enfield Chase, Middlesex.

GROUPS.

Messrs. Waterer, Sons and Crisp, Ltd., had a very large group of specimen Hollies, many of which were attractively well berried. Ilex argentea marginata and I. regina Silver Queen were two excellent Silver variegated plants, while golden-leaved forms were Gold King, Waterer's Gold, Gold Queen, and I. aurea marginata. The uncommon I. Fargesii, with spineless leaves, was also represented, and there were also excellent specimens of I. Pernyi with pretty foliage; I. altarclarence, which possesses Chestnut-red berries; I. tortuosa, with quaintly curled foliage, and I. Waterer's compacta, a choice form of neat habit. Prominence was given to fruiting specimens of Callicarpa Giraldiana, with lilac-coloured berries, and the group was bordered with berried Berberis, Sarcococca humilis, with bright glossy leaves; Vaccinium Vitis-Idaea, Skimmia japonica, and Veronica Hectori (Silver Banksian Medal).

Mr. W. B. Cranfield, Enfield Chase, staged a wonderful collection of hardy Ferns, of which he is one of the foremost raisers in the country. The collection was rich in many new and rare forms, and it was with difficulty that a selection could be made, for all were of outstanding merit. Polystichums were well represented, and of these a few of the choicest were P. angulare plumoso-divisilobum esplan, with light green fronds which were taking on a bronzy hue; P. a. grandiceps Rousden var., the fronds of which are quaintly tasselated; P. aculeatum gracillimum Cranfield var., with deep green, feathery fronds and of which there were six different types; P. aculeatum pulcherrimum (Druery), a fine form with dark green fronds; P. angulare Baldwinii, a seedling from the original plant with light green, daintly cut fronds, and P. a. nitescens grande (Cranfield), light green, and P. a. nitescens Kalon (Cranfield), two varieties of P. a. nitescens (Jones). Scolopendriums, Lastreas, and other genera were also exhibited in choice variety. (Silver Banksian Medal).

Mary Monro, pink; The General, red; Bertha Turner, apricot-rose; and The Adjutant, scarlet, were four new hybrid Tea Roses shown in the collection staged by the Rev. J. H. Pemberton. The flowers were of fine quality considering the time of the year. (Silver Banksian Medal).

Messrs. B. Ladhams, Ltd., staged hardy flowers, amongt which were a collection of hybrid Lobelias, the scarlet Schizostylis coccinea and the brightly coloured rose-purple, Polygonum atrosanguineum (Silver Banksian Medal). Violets were shown in excellent condition by Mr. J. J. Kettle, Marie Louise, Princess of Wales, and the new Mrs. Lloyd George being particularly good (Bronze Banksian Medal). Mr. B. Pinney made a feature of his new Violet Tiny Whittaker, a large amethyst single flower.

Winter flowering Begonias were displayed by Mrs. Sofer Whitburn (gr. Mr. A. S. Gooden), Amport St. Mary's, Andover, and the group provided a warm touch of colour to the hall. The specimens were very well-grown and were freely flowered in pots ranging from three to six inches in diameter, and illustrated the usefulness of this type for cultivating in a small compass. Optima, salmon; Flambeau, a double form with scarlet flowers; Gem, Elatior and Ideala, three rose-scarlet varieties; Exquisite, a large flower of salmon-rose colour, and Eclipse, scarlet (Silver Banksian Medal).

Messrs. L. R. Russell, Ltd., staged stove and greenhouse plants with good taste, and in this varied collection were well coloured Codiaeums represented by C. Reidii, Lord Balfour, B. Comte, and Prince of Wales. Of Dracaenas there were the brightly-coloured Prince Manouk Bey and Lord Wolseley, while other good foliage plants were Anthurium crystallinum, Alocasia argyrea, Maranta splendida, 'Hevia braziliensis, and the rare Bertolonia Van Houttei, and Anoectochilus Dawsoniana. (Silver Banksian Medal.) At one end of the group Clematis and berried shrubs were pleasingly grouped. (Silver Banksian Medal.)

Perpetual-flowering Carnations in excellent condition were staged by Messrs. Stuart Low and Co., the new varieties being represented by Eileen Low, salmon pink; Sir Phillip Sassoon, crimson; Brilliant, scarlet; Duchess of York, salmon rose, spotted with scarlet; and Lord Lambourne, scarlet. They also showed the new Rose Roselandia, of Apricot colour, and a small collection of Winter-flowering Begonias at one end of the exhibit. (Silver Banksian Medal.)

Messrs. Allwood Bros. had a group of Carnations, including Laddie, salmon-pink; Topsy, crimson; White Pearl, and the new variety, Shot Silk, a flower of good form, with serrated petals of chestnut-red colour flushed with scarlet. It might well be described as a scarlet Circe. (Bronze Banksian Medal.)

Mr. C. Engelmann showed Carnations, of which Tarzan, scarlet; Laddie, salmon-pink. and Lassie, bright cerise, are a selection; (Bronze Banksian Medal.)

Messrs. James Carter and Co. exhibited the beautiful Rivina humilis, a warm greenhouse plant not often seen. The berries are of a brilliant scarlet colour, and hang gracefully in pendulous racemes.

Messrs. H. J. Jones, Ltd., had a very imposing group of magnificent Chrysanthemums arranged across one end of the hall. The background consisted of tall columns of Japanese varieties, including W. Rigby, yellow; Mrs. Geo. Monro, crimson with buff reverse; Sulphur Queen, Mrs. G. Drabble white; Mona Davis, pink; Buttercup, yellow; Edith Cavill, bronze-yellow; and Mrs. R. C. Pulham, yellow. Towards the front the flowers were arranged in tall baskets and vases set at different levels, and the principal varieties, among single flowers, were Phyllis Cooper, yellow; Sandown Radiance, crimson-scarlet; Floria, pink; Catriona, pink; Gem, white; and Margaret, terra-cotta. Two exquisite decorative varieties were E. Reeves, yellow, and Mrs. Matcham, orange-yellow. (Gold Medal.)

Mr. F. G. Wood made a display of Chrysanthemum Golden Marvel, a bright, orange-yellow decorative variety. (Bronze Banksian Medal), while Messrs. J. Godfrey and Son were responsible for a neat group, consisting of their own introductions, of which Devonshire Cream, yellow; Joan Godfrey, crimson-scarlet; November Glow, orange-Apricot; Coleridge, amber shaded bronze-Apricot; and Gorgeous, crimson, were prominent varieties among the single flowers. Queen of the Pinks is an exceedingly pretty incurved Japanese variety of silvery-pink colour, and Mary Godfrey, an Anemone-centred variety with pink-ray florets, attracted attention. (Bronze Banksian Medal.)

Messrs. K. Luxford and Co. staged a bright group of single Chrysanthemums, including Nona, a magnificent white variety; Mr. A. Robertson, pink; Oriole, yellow, with slightly-quilled florets; Catriona, rose; and Esme Walters, deep yellow. (Silver Banksian Medal.)

Fruit and Vegetable Committee.

Present: Messrs. C. G. A. Nix (Chairman), Jos. Cheal, G. F. Tinley, S. B. Dicks, W. F. Giles, J. Wilson, A. Bullock, E. Neal, T. Pateman, E. Laxton, P. D. Tuckett, A. Metcalfe, W. H. Divers, E. A. Bunyard, and A. N. Rawes.

Amongst the new fruits submitted for award was a very fine type of coloured Lane's Prince Albert, sent by Messrs. B. R. W. and B. Hughes, who stated that they had top-grafted trees of Ecklinville Seedling with Lane's Prince Albert and this coloured sport had appeared on six of the trees. It was considered that this was one of the finest of the coloured bud sports of this particular variety, and as there is a demand for highly coloured cooking Apples in the north, it was decided to recommend the variety for trial amongst commercial varieties of fruits at Wisley.

A very large Apple named Colonel Yate, raised from Lane's Prince Albert crossed with Peasgood's Nonesuch was shown by Mr. W. H. Divers, West Dean, Hook, near Surbiton. It is a heavy fruit, but it was considered that it showed no advance on existing varieties.

GROUPS.

A very excellent exhibit of hardy fruits, comprising eighty-six different kinds, was shown by Sir Charles Nall-Cain (gr. Mr. T. Pateman), Brocket Hall, Hatfield, for which a Gold Medal was awarded. The fruits included Apples, Pears, Plums, Raspberries, Nuts and Quinces, and all were of the very choicest quality. The exhibit was tastefully decorated with small, highly-coloured Crotons and sprays of Cotoneaster in berry, arranged on the white groundwork. Notable varieties of Apples were Emperor Alexander, Cox's Orange Pippin, Lord Derby, The Queen, Bramley's Seedling, Bismarck, Hormead Pearmain, Royal Jubilee, Mére de Ménage, Rival, Allington Pippin, Christmas Pearmain, Laxton's Superb, American Mother and Ellison's Orange; while the finest Pears were Doyenné du Comice, Pitmaston Duchess, Le Lectier, and Beurré Alexander Lucas. The dishes of President and Coe's Golden Drop Plums were excellent, as were also the fruits of the autumn-fruiting Raspberry Heytor.

Messrs. Dobbie and Co. were awarded a Gold Medal for an exhibit of Potatos, comprising all the best sorts in cultivation, the great majority being varieties immune to Wart disease. The tubers were evenly matched, clear of skin and perfect specimens, such as would win first prizes at any exhibition. Amongst the many sorts exhibited, we may mention as being especially good, Golden Wonder, Field-Marshal, a late round variety with much of the russet marking found in Golden Wonder; Duke of York, still the finest of all early Potatos; Witch Hill, a very pretty white, first early kidney variety; Arran Comrade, The Bishop, which is becoming very popular as a late variety; Di-Vernon and The Cardinal, the last an early red kidney variety, much deeper in colour than the older Mr. Bresse, and as useful for exhibition purposes.

A very excellent exhibit of vegetables was shown by Messrs. Barr and Sons for which a Silver-gilt Knightian Medal was awarded. The collection comprised one hundred and fifty different kinds, including most of the cultivated herbs. The method of staging was in the best exhibition style, and the group was one of the features of the exhibition. The quality throughout was exceptionally good, and, considering the lateness of the season, the exhibit left little to be desired. Where all the kinds were of such uniform excellence of quality it is a difficult matter to appraise which was best, but we select the following as being worthy of mention: Gladstone Peas, Barr's Pink Celery, Prizetaker Leeks, Barr's Autumn Queen Cauliflowers, Froxfield Onions, Cheltenham Beets, New Intermediate Carrots, New White Mammoth Parsnips, Wax-podded Golden Queen Beans, and Standard Brussels Sprouts.

Obituary.

Alexander Inglis.—The mortal remains of Mr. Alexander Inglis, market grower, Cockenzie, East Lothian, were interred in Prestonpans Cemetery on Tuesday, October 28th. A large company attended, amongst whom were quite a number of market gardeners of the district, viz., Messrs. George D. Lowe, Ferniclea, Inveresk, David Lowe, sen., and David Lowe, jun., Kirkpark, Musselburgh; James W. Scarlett, Sweethope, Inveresk; William Wright, Preston and Seton West; James Rennie, Tranent; and Mr. Pennycook, Pencaitland. There were also present a number of the leading tradesmen of Prestonpans and Cockenzie. Amongst the beautiful wreaths and floral offerings was one from the Edinburgh Market Gardeners' Association. Mr. A. Inglis died very suddenly at the age of fifty-five while he was preparing to attend the Waverley Market, Edinburgh, on Saturday, October 25. He was the third of his name, his father and grandfather having been named Alexander, and they were market gardeners and famous growers of high-class vegetables over a period exceeding sixty years in Prestonpans and Cockenzie. Thorntree Mains was purchased by him a few years ago and was suitable for all kinds of vegetable crops. The fishing and mining population in the immediate vicinity provided ample women workers, so that all work was accomplished in good time at moderate expense. The greater proportion of the produce was sent direct to Glasgow by rail. Mr. Inglis was even better known in Glasgow than in Edinburgh. His father at a comparatively early age, it may be mentioned, was kicked by a horse while he was removing wood from the agricultural show ground at Prestongrange, and succumbed to his injuries. The deceased leaves a widow, two sons and one daughter who mourn his loss; a brother is Provost Hew Inglis, Cockenzie.

Alfred Taylor.—We regret to learn of the death of Mr. Alfred Taylor, head gardener of the Warren House estate when in possession of the late Mrs. Bischoffshein. In his earlier years Mr. Taylor was foreman at Aske Hall, Yorkshire, the seat of the Marquis of Zetland, and he was employed in several other important gardens. He became gardener to Lord Brougham and Vaux at Brougham Hall, and later to W. K. D'Arcy, Esq., at Stanmore Hall, Stanmore, Middlesex, and was gardener subsequently for some considerable time, as already stated, to the late Mrs. Bischoffshein.

ANSWERS TO CORRESPONDENTS.

Dahlia Foliage for Examination, Etc.: *R F. S.* The Dahlia foliage arrived too shrivelled to admit of a proper identification of the trouble, but there were signs of aphis and red spider infestations, noted by the presence of moult skins and "webbing" respectively. The refusal of the plants to flower can scarcely be attributed to the damage done by these two pests, but Dahlias are sometimes so badly attacked by a species of hygus that the plants refuse to bloom. A nicotine wash is efficient against aphides and capsids, but against the latter pest it must be applied before the bugs are in the nymph stage and before they become winged. With regard to the grubs in manure it is probable that these are the larvae of some species of dung beetle, Aphodius or Geotrupes. There are several proprietary phenol and cresol compounds which would destroy the grubs, but care should be taken that treated manure is not used for a month after treatment.

Gardening Dictionary: *C. R. C.* *Black's Gardening Dictionary* may be obtained from our Publishing Department, price 11/3 post free.

Names of Fruits: *G. L.* Probably Beurré Bosc. *W. C. D.* Charles Ross. *G. K. P.* 1 and 4, not recognised; 2, Emperor Alexander; 3, Cellini; 5, Doyenné du Comice; 6, Beurré Diel; 7, Pitmaston Duchess; 8, Brown Beurré. *H. B. and S.* Not recognised; probably a local variety which greatly resembles Jolly Beggar. *S. B.* 1, Lady Sudeley; 2, Worcester Pearmain: 3, Emperor Alexander; 4, Lord Grosvenor; 5, Lane's Prince Albert; 6, Pitmaston Duchess; 7, decayed; 8, Doyenné du Comice. *E. W.* 1, Flander's Pippin; 2, Yorkshire Beauty; 3, decayed; 4, Lord Lennox; 5, Rymer, 6, Norfolk Beefing. *T. R.* Pears, 1, Williams' Bon Chretien; 2, Beurré Superfin; 3, Gansel's Bergamot; 4 and 17, Doyenné du Comice; 5, 9, 14, 16, and 18, decayed; 6, Nouvelle Fulvie; 7, Zéphirin Grégoire; 10, Marie Louise; 11, Beurré de Naghan; 12, Pitmaston Duchess; 13, Beurré d'Amanlis; 15, Citron des Carmes; 19, Durondeau. Apples, 1, Lady Sudeley; 2, Trumpington; 3, Emperor Alexander; 4, Twenty Ounce; 5, Sandringham; 6, Golden Spire; 7, Mannington Pearmain; 8, King's Acre Pippin. *C. F. G.* Duchess of Oldenburgh. *Correspondent, Langport.* Decayed. *G. P.* Mabbot's Pearmain. *Horti.* 1, Early Harvest; 2, Early Wax; 3, Small's Admirable; 4, Bramley's Seedling, 5, Winter Greening; 6, 28, and 24, Stirling Castle; 7, Keswick Codlin; 8, White Westling; 9, Golden Harvey; 10 and 14, Warner's King; 11, Royal Russet; 12, Lord Suffield; 13, Golden Noble; 15, too small to identify; 16, Ross Nonpareil; 17, Jolly Beggar; 18, Ashmead's Kernel; 19 and 20, Brownlee's Russet; 21, Cornish Gilliflower; 22, Early Joe; 23, Alfriston; 24, King of the Pippins; 25 and 26, Cox's Orange Pippin; 27, Pine Apple; 28, Stirling Castle; 29, Aston Town; 30 and 35, Norfolk Stone Pippin; 31, Braddick's Nonpareil; 32, Washington; 33, Bismarck; 36, French Crab; 37, Calville St. Sauveur; 38, Sturmer Pippin; 39, Potts's Seedling. *C. S.* 3 and 17, decayed; 2, Reinette du Caux; 5, Glastonbury; 6, Newton Wonder; 7, Wealthy; 8, Five Crown Pippin.

Onion for Identification: *E. D.* The Onion is Allium fistulosum and is commonly known as the Welsh Onion. In this country it seldom finds a place among our culinary vegetables, and the taste and smell are very powerful. It is a native of Siberia, and although it may readily be increased by division it may also be raised from seeds sown in the autumn or spring.

Perennial Herbaceous Plants: *J. E. A. G* The term "perennial herbaceous plants" would include all plants whose flower stems die down every year, but having root-stocks remaining alive throughout several winters. Bulbous plants such as those you mention in list A are generally included under this heading, and unless the schedule stated otherwise you were perfectly justified in showing these in your collection of perennial herbaceous plants. With regard to the Antirrhinum being admissible under this heading it is difficult to express a definite opinion. The Antirrhinum in favoured localities may prove of perennial duration, but in most gardens it is treated as an annual or biennial. Salvia patens is a perennial herbaceous plant, and unless the schedule definitely excludes half-hardy or tender subjects it would be eligible for inclusion under the above heading.

Potatos Treated with Nitrate of Soda: *D. B. S.* The tubers would be best soaked in the solution of nitrate of soda immediately before they are planted.

Tomato Foliage Disfigured: *R. H. W.* The Tomato foliage is not affected with a fungus, and the disfigurement may have been caused from drip in the greenhouse or by drops of impure water being allowed to lodge on the leaves. The same remark also applies to the blooms of Pelargoniums sent for examination.

Tomatos for Market: *V. F.* Four good commercial varieties of Tomatos are Early Market, Kondine Red, Ailsa Craig, and Best of All. All are heavy croppers, and therefore valuable for market. Kondine Red is inclined to give many mis-shapen fruits if the soil is too rich; the other three produce even-sized fruits under good cultivation, and come into bearing quickly. Early Market is one of the best for producing an early crop.

Magnolia grandiflora: *W. G. G.* This beautiful evergreen Magnolia seldom produces an abundance of flowers; the form known as the Exmouth variety is better than the species in this respect. Wall climbers, especially those with large leaves, frequently suffer from dryness at the roots close in to the wall. We suggest you give the roots a liberal soaking of water three or four times a year, and give also an occasional supply of liquid manure. Do not root prune the tree. Animal manures are preferable to artificial fertilisers for Magnolias.

Communications Received.—F. E. A. C.—Gardener. Herts.—J. S.—J. P.—H. E. G.—D. S. F.—J. C. B.—W. A. B.

CATALOGUES RECEIVED.

R. C. Notcutt, Woodbridge, Suffolk.—Fruit trees, alpine and herbaceous plants.
Morle and Co., Ltd., 150-156, Finchley Road, N.W.—Roses, trees and shrubs, etc.
Chas. Turner, Slough.—Roses.
Hurst and Son, 152, Houndsditch, E. 1.—Flower and vegetable seeds. (Wholesale).
T. Smith, Daisy Hill Nursery, Newry.—Roses.
W. Smith and Son, Ltd., Aberdeen.—Forest trees shrubs, Roses, etc.

Foreign.

Conyers B. Fleu, Jr., Germantown, Philadelphia, U.S.A.—Tree, shrub, and perennial seeds.
B. Mullerklein, Baumschulen, Karlstadt-a-Main.—Trees and shrubs.

THE
Gardeners' Chronicle
No. 1977—*SATURDAY, NOVEMBER* 15, 1924.

CONTENTS.

Agriculture Ministry of, changes at the ... 327
Alpine garden—
  Asperula suberosa ... 329
Annuals for greenhouse and conservatory decoration 334
Bibliographical curiosity, a 336
Birmingham Chrysanthemum Show ... 328
Books, notices of—
  Crocuses 336
  Flowering Plants of South Africa ... 327
Carnation Winsome Wharton 340
Darwin medal, award of the 328
Fruit garden, the market 339
Fruit register—
  Latest keeping dessert Apples 340
Fruit trees and vines, the training of wall 339
"Gardeners' Chronicle" seventy-five years ago 329
Gardeners of to-day, young 340
Glasgow Chair of Botany 328
Greenhouses, the heating and ventilation of ... 338
Hardy flower border—
  Actaea 334
  Aethiopappus pulcherrimus 334
  Mertensia sibirica ... 333
  Salvia dichroa ... 333
Indoor plants—
  Flowering plants for the warm house in winter 334
Medals, the R.H.S. ... 327
Mistleto as a cultivated plant 335
Nursery notes—
  Mr. H. J. Jones, Lewisham 338
Park, prizes for design of a 328
Parks and gardens, public 335
Pinetum, a new ... 337
Plants new or noteworthy—
  Fraxinus americana ascidiata 335
Pockett, Mr. T. W. ... 328
Rhododendrons 332
Royal Horticultural Society's fruit show ... 340
Snowdrops from seeds ... 340
Societies—
  Brighton Chrysanthemum 344
  Croydon Chrysanthemum 342
  Glasgow and West of Scotland 346
  Mysore Horticultural 345
  National Chrysanthemum 341
  Reading and District Gardeners' 342
  Société Nationale d'horticulture de France 343
  United Horticultural Benefit and Provident 345
Trees and shrubs—
  Autumn colouring of Cercidiphyllums ... 331
  Pernettya mucronata 331
  Shrubby Clematis ... 331
Verbena venosa ... 340
Week's work, the ... 330

ILLUSTRATIONS.

Asperula suberosa 329
Chrysanthemums exhibited by Messrs. Vilmorin-Andrieux & Co. at the Paris show 343
Chrysanthemums: Sunburst, 333; Thomas W. Pockett 331
Fraxinus americana var. ascidiata 335
Pockett, Mr. T. W., portrait of 328
Pseudotsuga japonica; shoot with cone 337

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 42·0.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday November 12 10 a.m.: Bar. 30·4; temp. 50°. Weather, raining.

R.H.S. Medal Awards.

From time immemorial the medal has been utilised as a reward for meritorious service or as a recognition of something done especially well, therefore it is not surprising that for more years than the oldest of us can remember medals have figured as rewards at flower shows. Nearly all the learned societies, corporations and other important bodies award the medal as an honour to prominent members or for some special work done, and it is fitting that our premier horticultural society should have its various medals for special purposes. Horticultural societies generally have for long utilised the medal as a mark of distinction, particularly for successes in competitions at flower shows, but probably the most prized of all medals at horticultural shows is the Gold medal of the Royal Horticultural Society. Other medals of horticultural significance, the possession of which is regarded as a great honour by the recipients, are the Victoria Medal of Honour in Horticulture, the Veitch Memorial Medal, the Gold medal of the Royal Caledonian Horticultural Society and the White medal of the U.S.A. Most of the special floricultural societies have their own medals, including the National Chrysanthemum Society, the National Sweet Pea Society, the National Rose Society — to mention only a few — and most of these societies have medals struck in honour of some prominent grower or raiser of the flower, such as the Dean Hole Memorial Medal of the National Rose Society, the Dean Memorial Medal of the National Dahlia Society, and the handsome Henry Eckford Memorial Medal of the National Sweet Pea Society. It is the highest ambition of those interested in the particular flowers indicated to be made the recipient of these special awards. The Royal Horticultural Society's list of medals was at one time a very small one; the Gold medal was the principal one and the few others were ranked in importance according to what became a recognised scale. Thus the Silver Flora medal was considered to be of higher value—although it does not necessarily follow that it should be—than the Silver Banksian medal, perhaps because the one was larger than the other. The Banksian medal was given for fruits and vegetables as was also the Knightian medal, but here again the Knightian medal was regarded as much the superior. In recent years many new medals have been added by the R.H.S. to commemorate prominent horticulturists associated with the Society; thus, after the death of Dr. Hogg, a medal was struck in his honour, known as the Hogg medal. The Lawrence medal was instituted in 1906 to celebrate the late Sir Trevor Lawrence's twenty-one years tenure of office as President of the Society. This medal is struck only in gold and is awarded directly by the Council who limit the award to one medal a year and, to make it more valuable, the same exhibitor may not receive it oftener than once in three years. The Grenfell Medal was awarded to mark the close of the presidency of Field-Marshal Lord Grenfell. This multiplication of medals in recent years led to some little confusion, for it was the former practice to bestow the Flora medal, Knightian medal, and the Banksian medal, all of which are struck in bronze as well as in silver and silver-gilt, to exhibits considered worthy of meriting such awards. To win a silver Flora medal was regarded as a very high accomplishment and to receive this medal in silver-gilt was a greater honour, especially at a time when the gold medal was awarded only on very rare occasions. Winning the Knightian medal for an exhibit of fruits and vegetables was, at one time, regarded as a great prize, and when the Hogg medal was instituted it was the ambition of fruit growers to obtain this award. Now all is changed. The Council in its wisdom has determined that the medals shall be reserved for special purposes, thus:—the Flora medal is now given for flowers and ornamental plants at Chelsea and Holland Park; the Banksian medal for flowers and ornamental plants at the fortnightly meetings; the Hogg medal for fruit; the Knightian medal for vegetables; the Lindley medal for a plant or plants of special interest or beauty, or showing exceptional skill in cultivation; the Grenfell medal for pictures or photographs, or for exhibits of a similar nature and of botanical or horticultural interest; and the Sanders medal for the best greenhouse novelty shown at the Society's meetings in the course of the year. This re-shuffling of the awards has not met with the unanimous approval of exhibitors, and it has certainly not made the work of the respective committees easier. For instance, it has come to be recognised that the Hogg medal is a high award and whereas in former times the Silver Banksian or Bronze Banksian medal was given to exhibits of fruits of only average merit, the Hogg medal is now the only medal that can be awarded by the Fruit and Vegetable Committee to a display of fruit. The difficulty is that sometimes a collection is worthy of a higher award than a bronze medal, but not quite equal to the award of the large Silver Hogg medal, whereas in the past the smaller Silver Banksian medal was quite appropriate. So it comes about that growers now-a-days are winning Silver Hogg medals with exhibits of fruits which at one time would not have been considered worthy of the award; we believe in certain cases the award of a Silver Hogg medal has been withheld because this was considered too valuable and its bronze counterpart inadequate. At the meeting of the R.H.S. held on November 4, the comparatively small Silver Banksian medal was awarded to groups of outstanding merit. Mr. W. B. Cranfield's magnificent display of British Ferns, and Messrs. J. Waterer, Sons and Crisp's splendid group of berried and ornamental foliage shrubs; these appeared to merit higher awards. We have had brought to our notice the case of a gardener who received a valuable medal in 1923 for a fine exhibit of plants, but this year he was awarded the commonplace Silver Banksian medal for a superior display. Gardeners know that such discrepancies cannot always be explained satisfactorily to their employers and they will hesitate to exhibit at the fortnightly meetings because of the fear of receiving one of the least valuable of the Society's medals. In time the newer generation of gardeners may become accustomed to the present grading of the R.H.S. medals as instituted by the Council, but in the meantime there will be much dissatisfaction, as was the case at the fortnightly meeting on the 4th inst.

Changes at the Ministry of Agriculture.—The Prime Minister has appointed the Rt. Hon. E. F. L. Wood to be Minister of Agriculture and Fisheries in the new Government, and Lord Bledisloe to be Parliamentary Secretary to the Minister of Agriculture and Deputy Minister of Fisheries. Mr. Wood is the son and heir of Lord Halifax, and was educated at Eton and Christchurch and is a Fellow of All Souls. He was Parliamentary Under-Secretary to the Colonies in 1921–22, and President of the Board of Education to the Government in 1923. Lord Bledisloe is Chairman of the Rothamsted Experimental Station, of the Long Ashton Fruit Research Station, and of the Royal Agricultural College, Cirencester, and it is understood that he will now resign these offices. Lord Bledisloe's connection with these institutions will make him familiar with some of the difficulties of the farmer and horticulturist, and his appointment should meet with the approval of growers generally. So far as horticulture is specially concerned there will be no change in the position occupied by Mr. W. Lobjoit, whose success in his position as Controller of Horticulture under the Minister of Agriculture is generally recognised; he and Mr. H. V. Taylor, the Deputy Controller, have done much useful work in the interests of gardening and especially of commercial horticulture.

Flowering Plants of South Africa.—Part 16 of Volume IV, being the issue for October, 1924, of *The Flowering Plants of South*

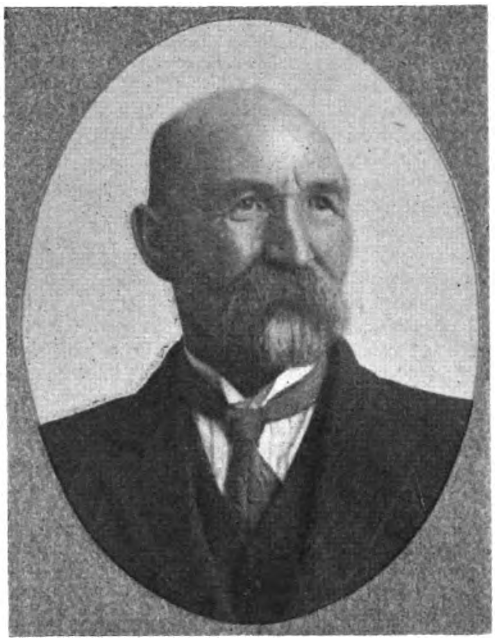
Africa, contains illustrations and descriptions of ten plants. Of the total, no fewer than six are succulents, including Aloe Schlechteri, t. 151, Cotyledon Wickensii, t. 154, Aloe petricola, t. 155, Crassula portulaceae, t. 156, Euphorbia Cooperi, t. 157, and Aloe chortolirioides, t. 160. Of these, Aloe Schlechteri has a two-forked inflorescence of bright red, almost scarlet flowers; Cotyledon Wickensii, an umbel of twelve to fifteen drooping, reddish flowers with reflexed petals; whilst Aloe petricola is a stemless species, said to be suitable for the rock garden. The other plants illustrated include Montbretia crocosmaeflora, t. 152, a well-known garden plant said to be a hybrid between Tritonia Pottsii and Crocosmia aurea; Oxalis lupinifolius, t. 153, a very pretty species with digitate leaves and very pale blush flowers of the characteristic shape and size of an Oxalis; Lachenalia pendula, t. 158, a well-known plant in cultivation, introduced so far back as 1874; and Cyrtanthus Galpinii, t. 159, a very pretty Amaryllidaceous plant with relatively large, tubular flowers of a pleasing, old rose shade. This plant is stated to be a native of the Barberton district of the Transvaal, and it is also stated that at Barberton the flowers are scarlet and not pink or rose. The collector, Mr. E. E. Galpin, F.L.S., described the flowers as scarlet, dusted with gold. In its natural habit the plant flowers during July and August, and it seems to be a suitable subject for cultivation in our gardens.

The Technical Committee of the Chamber of Horticulture.—At the next meeting of the Technical Committee of the Chamber of Horticulture, on the 19th instant, the following propositions submitted by Professor Maxwell Lefroy and Mr. Roebuck respectively will be discussed :—(1) That circular letters be sent to the various horticultural institutions asking what special branches of research work were being undertaken. That this information is desirable in order to avoid overlapping and to enable the Chamber's Technical Committee to refer querists to the actual institutions undertaking such research work ; (2) that a large increase in the number of problems referred to the Technical Committee relating to plant pests and diseases is desirable, and as a matter of co-operation, the Committee could then advise the local centres that such problems had been sent. Mr. A. S. Galt, of Leeds University, has been elected Chairman of this Committee for the ensuing year. Mr. R. Seymour Cobley was re-elected Vice-Chairman.

London School-Gardening Association.—Under the auspices of the London School-gardening Association a lecture on "Small Fruits and their Characteristics" will be delivered by Mr. R. G. Hatton, Director of the East Malling Research Station, on Friday, November 21, at 7 p.m., in the Lecture Theatre at the London Day Training College, Southampton Row, W.C. Sir A. Daniel Hall, K.C.B., M.A., F.R.S., Chief Scientific Adviser to the Ministry of Agriculture, will take the chair.

Birmingham Chrysanthemum Show.—The great autumn exhibition of the Birmingham Chrysanthemum, Fruit and Floricultural Society will be held on Tuesday, Wednesday and Thursday, November 18th, 19th and 20th, at Bingley Hall, Birmingham. This is the sixtieth exhibition held by the Society and it promises to be one of the best. The original date sent us was November 11, 12 and 13, but the Secretary, Mr. A. Noakes, 148, Bristol Street, Birmingham, notified us that the Committee found it impossible to hold the show on those dates and that it had been fixed for November 4, 5 and 6. Later in the summer, however, the schedule gave the dates as November 18, 19 and 20, but, unfortunately, this alteration was overlooked by us in view of the two communications previously received.

Mr. T. W. Pockett.—It is with very great pleasure we publish the portrait of Mr. Thomas W. Pockett, one of the most successful raisers of Chrysanthemums of the present day. Many fine varieties raised by him in Australia bear names of members of his family, but there are many others besides, some of which were distributed by the late Mr. W. Wells, Merstham, and others are being distributed by Messrs. Keith Luxford and Co., of Harlow. Probably the most outstanding novelty at the recent exhibition of the National Chrysanthemum Society was the variety which was named after this clever raiser and is figured on p. 331. Mr. T. W. Pockett was born at Cheltenham in 1857 and commenced work at the early age of ten years. For six years he was employed in either market gardening or farming, and when he was sixteen he went to Mr. Parker's nursery at Tooting, where the late Mr. E. H. Jenkins, also from Cheltenham, was then employed. At that time Mr. Parker and Mr. W. T. Ware were the leading growers of herbaceous plants. Mr. Brown, a former manager of Messrs. Pince's nursery at Exeter, was then manager of Mr. Parker's nursery, and under him Mr. Pockett was given charge of a portion of the establishment. Commercial horticulture, however, did not appeal to him very greatly, and a few years later he became foreman in the gardens of Mr. J. H. Elwes, father of the late Mr. H. J. Elwes, at Colesborne Park. Anxious to seek his fortune in other lands he married in 1878 and went to Victoria, Australia. Here he commenced market-gardening, but this was not attended with success owing to untoward seasons and lack of water. He again sought employment as gardener to a private gentleman, and was so successful that in due course he became a leading competitor, and on one occasion obtained first prize for the best arranged and best kept gentleman's garden within five miles of Melbourne. In 1888 he prepared plans for the present public gardens at Malvern, Melbourne, and carried out all the work in connection with the parks, gardens, and street planting controlled by the Malvern City Council. This work he continued until about six years ago, when he decided to retire and devote his attention almost exclusively to the raising of new Chrysanthemums, a work which he had previously carried out under varying conditions in his own private garden, with the assistance of members of his family. In 1901 Mr. Pockett paid a visit to this country, and was astonished at the progress that had been made in horticulture during his absence. In 1913 he again came to England, when he visited the Holland Park Show, many of the principal parks, and some of the best private gardens in England. Mr. Pockett is now paying his third visit to this country, but on this occasion he has devoted his attention especially to the Chrysanthemum. In a letter just received from him he writes: "It is impossible for me to find words to express my appreciation of the great courtesy extended to me during my visit, but I would like to take this opportunity of thanking Sir Jeremiah Colman, Mr. C. H. Curtis, Mr. J. Green, Mr. E. F. Hawes, and Mr. C. Harman Payne, who, with others, have made my visit so enjoyable and interesting, and I would especially mention Mr. T. Stevenson, who so very kindly accompanied me to the Paris Show, where we met so many French growers equally as enthusiastic as ourselves."



MR. T. W. POCKETT.

Glasgow Chair of Botany.—Widespread disappointment and regret is expressed at the announcement that Professor H. H. Dixon, Sc. D., F.R.S., Professor of Botany at Dublin University, has been unable to accept the appointment to the Regius Chair of Botany in the University of Glasgow. The Scottish Office, which made the intimation, states that he has been influenced by private reasons and that steps will be taken in due course to fill the vacancy.

British Mycological Society's Meeting.—The London meeting of the British Mycological Society will be held at the University College, Gower Street, W.C. 1, on Saturday, November 15, at 11 a.m. The following papers will be delivered :—"Conditions controlling growth and reproduction in Sporodinia," by Mr. W. Robinson, D.Sc. ; "Hymenial structure in three species of Stereum," by Mr. A. W. Excell, B.A. ; "A die-back of Rambler Roses caused by Gnomonia Rubi," by Mr. W. J. Dowson, M.A. ; "The staling of fungal cultures," by Miss Clara A. Pratt, M.A. ; and "Fragmenta Mycologica," by Mr. J. Ramsbottom, O.B.E., M.A.

The Darwin Medal.—The Royal Society has awarded the Darwin Medal to Prof. T. H. Morgan, Foreign Member, R.S., for his valuable work in zoology, especially his researches on heredity and cytology.

Competition for Design of a Jugo-Slav Park.—The department of the Board of Trade concerned with such matters has received from the Jugo-Slav authorities particulars of an international competition open to landscape architects, etc., for the submission of plans designed for the elaboration of the general plan of the Toptchider Park, near Belgrade. The prizes for the best plans submitted are, first prize £400, second £300, third £200, fourth £150, fifth £100. In addition, the sum of £250 is set aside for the purchase of designs failing to secure prizes. Plans must be submitted to the Minister of Agriculture and Water, rue Prole Matei 62, Belgrade, by December 31, 1924. Details of the competition and plans of the present park may be obtained from the office of the ministry at the address given above.

Appointments for the Ensuing Week.—Monday, November 17.—National Chrysanthemum Society's Floral Committee meeting 3.15 p.m. and General Committee Meeting at 6 p.m. Tuesday, November 18.—Royal Horticultural Society's Committees meet ; Birmingham Chrysanthemum Society's show (3 days); Winchester Horticultural Society's lecture; Croydon and District Horticultural Society's meeting. Wednesday, November 19.—Hull and East Riding Chrysanthemum Society's show (2 days).—Thursday, November 20.—Aylesbury Chrysanthemum Society's show. Saturday, November 22.—Morley and District Paxton Society's show; Eastbourne Horticultural Society's meeting.

“Gardeners' Chronicle” Seventy-five Years Ago.—*Manettii Stocks for Roses.*— Our readers have possibly heard of a certain Rosa Manettii, famous among gardeners as a stock. “Last, but not least,” says Mr. Rivers, in his excellent Guide, “is the Rosa Manettii, a Rose I received some eight or ten years since from Como, from Signor Crivelli, who recommended it as the very best of all Roses for a stock. It was raised from seed by Signor Manetti, of the Botanic Garden at Milan; cuttings of this may be prepared and planted exactly as recommended for the Boursault. All the Roses I have budded on this stock have succeeded admirably; above all the Hybrid Perpetuals, which scarcely seem to know when to leave off growing and blooming in the autumn; indeed this stock is remarkable for its late growth; for it may be budded during the whole of September; another excellent quality is, that it never gives any suckers from its roots; and if planted in a stiff loam highly manured, it will, if cut down close to the ground, make shoots, in one season, six to eight feet in height; and will thus form fine standards. I have a stem of three years' growth, larger than a stout broom handle, and apparently increasing rapidly in girth; it seems to flourish equally in light and dry as well as in stiff soils; and it will, I trust, be of much value to the Rose amateur, who, if the soil of his Rose garden is light and dry, is so often troubled with the numerous suckers thrown up by the Dog Rose.” Every year's experience confirms the justice of this statement, and we entertain no doubt that R. Manettii will become as indispensable to a gardener as a pruning-knife or a rake. Of its power as a stock we have before us an example in the form of the hybrid perpetual called Sidonii. Of this Messrs. Henderson, of Pineapple Place, planted a small cutting in April, 1848, and budded it in the end of the September following. It is now four feet six inches high with twelve stout limbs, and we understand that Messrs. Henderson have in the same way obtained scores of plants of various sorts—some even larger. *Gard. Chron., November* 17, 1849.

ALPINE GARDEN

ASPERULA SUBEROSA.

The three specimens of Asperula suberosa illustrated (Fig. 119) are growing in the gardens at Coombe House, Croydon, Surrey, the residence of Frank Lloyd, Esq. I venture the opinion that such fine plants are seldom met with in this country, but if a little trouble were taken similar specimens would result and prove of great interest to alpine enthusiasts. Without a doubt A. suberosa is the best of its race, but, unfortunately, it is not quite hardy in this neighbourhood unless it is placed in a very sheltered position in the alpine garden, and even then the position must be under an overhanging rock which will keep the rain entirely from the foliage and also afford slight shade when the plant is flowering during June and July. But the full beauty of this Asperula and its flowers is best seen when the plants are grown under glass and the period of flowering is brought forward to the middle of April.

The three plants illustrated commenced to open their flowers on April 16 and continued in beauty well into June, thus lasting for two months. After flowering, the plants were removed to a shady position and the pots plunged in a bed of coke ashes, among the Kabschia Saxifragas. They are kept well watered, but after watering is completed the foliage is lightly shaken to remove any moisture that may cling to the soft, woolly hairs. The secret of success lies in the protection of the foliage from water. On no account should it remain wet, otherwise the plant becomes small by degrees and beautifully less.

As this season was such a wet one, the plants were returned to the greenhouse quite early, although in a normal season they are left out-of-doors until towards the end of September and re-housed in a cold greenhouse, water being almost withheld until November. The soil would part from the sides of the pans if water was withheld entirely, but from November onwards water is given only once in three weeks, but upon the approach of March more frequent waterings are necessary.

When large specimens are grown, I have observed that many old undergrowths die annually, soon after the plants are housed. These are allowed to remain through the winter, as they appear to form a sort of drain for superfluous moisture and there is then no need to handle the foliage in winter, which is an advantage, as the new growths are extremely brittle during that period and snap very easily. The foliage has a dense covering of hairs, consequently the growths cling to one another tenaciously, therefore dead foliage should be removed in early April, when it will part very easily from the growths. At this season, if the live growths are raised, all the dead parts will fall away without damaging the plants, but watering must be withheld entirely for one day, so that the dead foliage is quite dry before its removal takes place.

The soil used for these plants consists of loam, leaf-mould, and fine silver sand, indeed, a suitable compost is one similar to that which will suit Primulas. Two or three pieces of sand-stone should be placed on the soil and pressed in firmly enough to keep them from rolling off the pot or pan. The plants should then be placed in between the stones, so that the latter may keep the foliage from laying too flatly and closely on the soil. Once they are established the plants will last in good order for many years. The specimen on the right in Fig. 119 has been in its pan for fifteen years and the other two for seven years. The central plant has made extraordinary growth on the side facing the camera and this is fourteen inches long. Each plant is placed in the centre of the pan and each receptacle is eight inches across and five inches deep; there has been no re-potting. Asperula suberosa is increased by division.

The foliage of this species is of a soft, woolly nature and grey coloured. The flowers are a beautiful ivory-pink with a bright gloss and they are one-and-a-quarter inch in length. The small, tubular petals recurve in a pretty manner and each spray carries eight to twelve blooms, in fact the plants remind one of beautiful pink coral. *Mark Mills.*

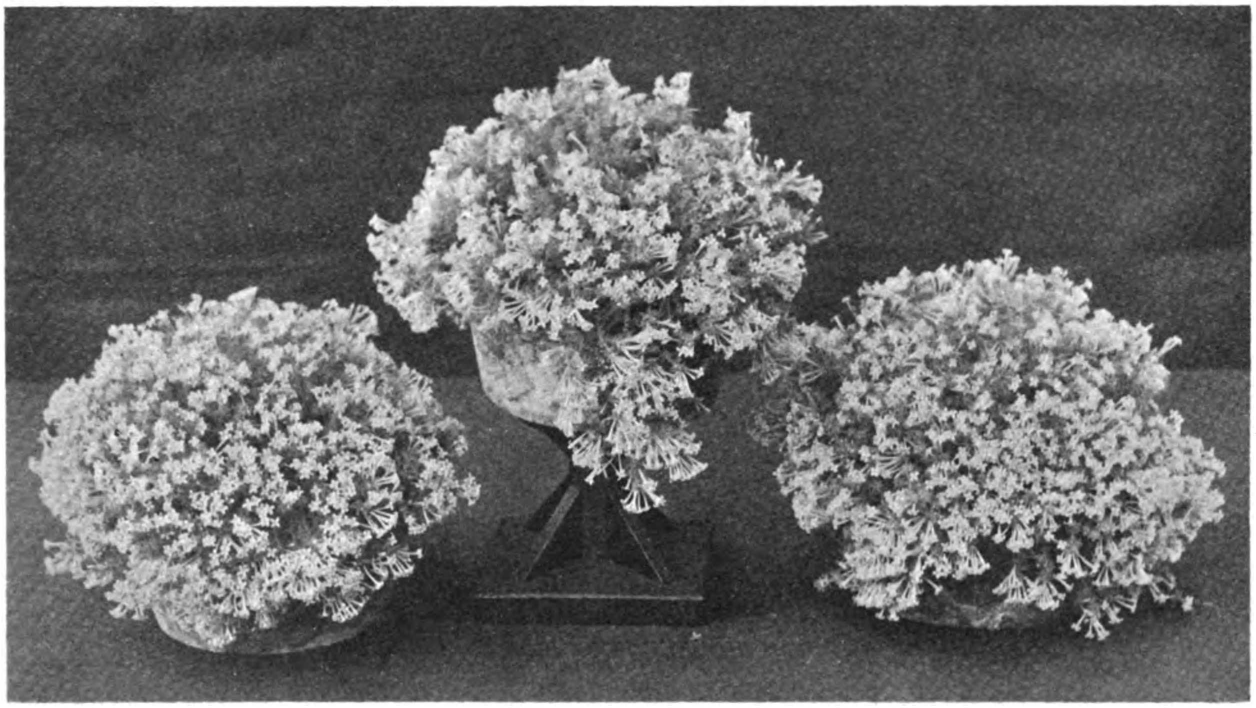


FIG. 119.—ASPERULA SUBEROSA.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Orchids in Flower.—Autumn-flowering Cattleyas, Laelias and their many hybrids, together with many Brasso-Cattleyas, will now and henceforward for some weeks furnish the chief attraction in the Orchid houses. Year by year hybrids of these Orchids increase in number and when used for decorative purposes produce excellent effects, especially under artificial light. The flowers will remain in good condition on the plants for some considerable time if the latter are kept on the dry side at the roots and the amount of atmospheric moisture is reduced, but great damage may be done to the plants if the flowers are left on until they fade. The members of the Cattleya family produce flowers more freely than many other kinds of Orchids and frequently quite weakly plants will send up flower spikes. The removal of the flower scapes, so soon as they appear in the sheaths, will greatly assist a plant in regaining its lost vigour. It is not at all times advisable to remove the flower spikes too soon from vigorous, healthy specimens, as it sometimes causes them to grow out of season. After the flowers are removed, the succulent flower-sheaths should be cut off, severing them as closely as possible to the top of the pseudo-bulbs. Decay sometimes sets in at the crown of the new pseudo-bulbs shortly after cutting away the flower sheaths, particularly in the case of Cattleya aurea and hybrids from this species. A little powdered charcoal placed on top of the cut surface will often dry up the moisture and prevent decay. The resting period of members of this section commences soon after the plants cease flowering. The plants at this stage should be placed in the coolest and best ventilated part of the Cattleya house, affording them only sufficient water at the roots to keep the pseudo-bulbs plump, and giving them every encouragement to form new roots.

Cattleya Trianae.—Plants of Cattleya Trianae that have completed their growths should be watered carefully; they need only sufficient moisture to keep the old roots moist, but the supply may be increased slightly when the flower-spikes are seen to be pushing from the base of the sheaths.

Cattleya Lawrenceana.—This Orchid makes its growth during the winter months, and is, in consequence, a difficult plant to cultivate successfully for many years. It should be grown in the warmest part of the Cattleya house and placed near to the roof-glass in order that it may obtain plenty of light. The compost should be allowed to become quite dry between each application of water, which should be poured around the outer edges of the compost.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Montbretias.—These useful autumn-flowering plants increase rapidly if left undisturbed for a few years, and in light, well-drained soils the roots pass the winter quite safely. They should not be left too long without replanting, however, or the corms will deteriorate through starvation and finally fail to flower. When the foliage has ripened, lifting and replanting may be carried out. During severe weather, particularly after replanting, Montbretias should be protected with a little ashes or leaf-mould.

Border Chrysanthemums.—Although these are perfectly hardy, it is wise to lift a few plants of each variety that it is intended to propagate, and winter them in boxes in a cold frame. These will give stronger and better cuttings in the spring than can be obtained from plants wintered in the open.

Dahlias.—The lifting and storing of the tubers for the winter will now call for attention. They should not be stored in too dry a place or shrivelling of the tubers will result. A good plan is to store them in ashes in an outhouse from which frost can be excluded. Every plant should be labelled before it is stored, and any which may be wanted for propagation purposes in the spring put in the most accessible position.

Summer Bedding Plants.—Stocks of plants in pits and frames, raised from cuttings struck in the autumn, should receive frequent attention. Care should be taken that Zonal Pelargoniums, Fuchsias, etc., are not over-watered. Remove all decaying leaves, maintain a buoyant atmosphere in the pits, and endeavour to keep the plants clean, healthy, and comparatively dormant until the turn of the year. Pentstemons and Calceolarias which are well rooted in cold frames should receive ample ventilation, removing the lights entirely during the day when the weather is favourable.

The Rock Garden.—The rockery should be carefully watched for the removal of dead leaves and faded stems, which if left, are liable to cause some of the choicer plants to perish. Care should also be taken to keep the plants clear from fallen leaves, as small plants may soon become smothered and lost. Many rockery plants suffer more from excessive dampness in winter than from any other cause, and the accumulation of leaves around them is highly detrimental to their welfare. A few, such as Asperula suberosa, Androsace sarmentosa, A. villosa, Acantholimon venustum, Arnebia echioides, Omphalodes Luciliae, Soldanella alpina, and in particular plants which have tomentose foliage may be profitably covered with a sheet of glass. Where alterations are being carried out, the work should be proceeded with whenever weather conditions are favourable, and when planting new subjects the opportunity thus afforded should be taken advantage of for removing a portion of the old soil and substituting new and suitable material.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Pruning.—So soon as the leaves have fallen from the trees, it will be advisable to commence pruning, beginning with Apples and Pears. Where the trees have been summer-pruned to four or five eyes, the laterals should now be pruned back to two buds and the leaders to three or four eyes. Strong-growing trees may have the shoots left a little longer than weak growers, and take care, in the case of the leaders, always to prune to a bud pointing outwards. The resultant shoots next season will then grow outwards, thus tending to keep the trees open so that sun and air can reach the centres. Where trees have grown too thickly, especially in the case of standards and half-standards, some of the branches should be cut clean away with the saw, afterwards paring the cut surface with a sharp knife Where spurs have become congested and perhaps long, do not hesitate to cut some of the largest out; those left will greatly benefit by their removal. Drastic operations such as these, although necessary, should not be taken in hand all at one time, or the trees may receive a check. All prunings should be gathered and burned, and the ashes spread around the bases of the trees. Certain varieties bear on the points of the young shoots and require pruning accordingly. The grower will notice this during the fruiting season, and prune lightly, taking care, however, not to allow the trees to become too thick in the centres.

Figs.—These fruit trees may now be planted against a south wall for preference; they should not be grown in excessively rich soil, or they will make growth at the expense of fruit. A trench filled with ordinary soil, six feet long, two or three feet wide and two feet deep, with the sides lined with large slates or flat slabs of stone so as to restrict the roots for the first few years, will serve for planting. The bottom of the trench should be well broken up and coarse bricks or old mortar rubble placed thereon to ensure good drainage. Add plenty of broken mortar rubble with the soil as planting proceeds. Keep the roots as near the surface as possible, allowing about three inches of soil for the final covering. Mulch the root area with half-rotted manure when planting is finished, and lightly fasten the trees to the wall to allow for settling. The final nailing or tying of the shoots should be deferred for a time. Good varieties for growing out-of-doors are Brown Turkey and White Marseilles, as these are both hardy, only requiring protection in very severe weather. In spite of so much wet this autumn, outdoor Figs have ripened well and the fruits have been of very fair flavour.

Root-Pruning.—Most of this work should be finished by now, but where it has not been completed, push on with the operation so long as the weather remains open. Do not expose more roots than can be covered in the event of frosts. Old mats or stable litter may be used to protect the roots at night if it is desired to continue the work on the following day.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Early Pot Peaches.—Where ripe Peaches are required towards the end of April or early in May, preparations should be made now to obtain ripe fruits by that date. Trees that have been prepared in pots force more readily than those growing in borders. I have noticed that fruits of the same variety that have been grown in the same house in pots have ripened their fruits quite ten days or more earlier than the same sort planted out. This can easily be accounted for; the roots of trees growing in receptacles have the benefit of warmer surroundings and frequent applications of warm water applied to the roots during the tree's early stages of growth tend to favour quick progress. Trees that were repotted and others top-dressed as previously advised, should be placed inside now, or not later than the last week in November, after they have been thoroughly washed with a soapy insecticide, and the structure made sweet and clean by washing every part with strong soapy water. In some localities it will be necessary to wash the outside glass to obtain the maximum amount of light in the house. The receptacles should be stood on two bricks placed a small distance apart to ensure the water passing away freely. Fire heat will not be necessary for the first ten days or so unless very severe frosts occur, and the temperature falls below 45°, when a little artificial warmth will be an advantage. Peaches and Nectarines resent hard forcing, therefore always aim at a steady night temperature which should not exceed 48°, unless the outside conditions are extremely mild. Spray the trees with soft rain water on bright, sunny days after it has been warmed to the temperature of the house.

Pot Figs.—The earliest batch of Fig trees that have been prepared for early forcing in pots, as previously advised, will now be ready for forcing. Early Figs are more easily obtained from pot trees than from those planted out, and the crop is decidedly earlier. Presuming the trees have been prepared, very little attention will be required at this stage beyond the cleansing of the same, which should be done before placing them inside. The house also should be cleansed by thoroughly washing the woodwork, glass, etc. A hot-bed of fresh leaves and short litter should be prepared for the plunging of the pots; the temperature of the bed should drop to about 80° before the trees are plunged in it.

General Remarks.—All orchard house trees grown in pots, such as Peaches, Plums, Pears, Cherries, and Apples after they have been put in order with regard to potting and overhauling, should be placed closely together and their pots plunged in ashes to prevent them becoming broken by frost. Sometimes birds are a source of trouble in destroying the buds, in which case it will be wise to protect the trees with nets otherwise I prefer them to remain uncovered.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

French Beans.—Plants still in bearing in unheated frames should receive careful attention in watering and ventilating. Have plenty of covering material ready for use on cold nights to put over the frames to prevent a drop in the temperature giving a check to the plants.

Vegetables in Frames.—Endive, Lettuces, Cauliflowers, late-sown Carrots, and Parsley growing in frames should be carefully attended to. Clear away all weeds growing between the plants and stir the soil. Remove all decayed leaves. See that the plants do not suffer from want of moisture at the roots, and when watering is necessary attend to it on a bright morning.

Celery.—The latest batch of Celery is ready for the final earthing up. The work should be done on a dry day in order that the soil may be worked around the plants with the hand. Where early Celery is being dug, opportunity should be taken to fill the space between the ridges with decayed manure and, as the Celery is dug, to cover the manure with soil. Place a stake at each end of the line; this manured ground will be a suitable place on which to sow Peas for the coming season and will save time in early spring when labour is in demand.

Trenching.—The ground intended for the Onion crop next season should be trenched now, and enriched with plenty of farm-yard manure. The surface should be left as roughly as possible until the spring. Give the ground a moderate dressing of basic slag when the trenching is finished.

Endive.—Broad-leaved Batavian Endive is much better for withstanding severe weather than the Moss-curled type. Draw the leaves closely together and tie a strand of raffia around them to keep them in position. Some of the plants may be lifted with good balls of soil attached to the roots, and transplanted to frames for blanching; or boxes may be filled with plants packed closely together and placed in a Mushroom house.

Parsnips.—The decayed foliage and weeds should be cleared from Parsnip beds. This vegetable improves in flavour if left in the ground and dug as required. Dried Bracken Fern placed over the beds will prevent the ground becoming so hard in frosty weather as to make the digging of the roots impossible.

TREES AND SHRUBS.

AUTUMN COLOURING OF CERCIDIPHYLLUMS.

I was greatly interested in Sir Herbert Maxwell's "Notes from S.W. Scotland" (page 283), where he informs us that there is much variety amongst Cercidiphyllums, and I am indebted to him for the explanation why some plants take on the most gorgeous autumn colouring, whilst others growing near have proved disappointing. It might save a vast amount of disappointment to planters of this beautiful shrub, or small tree, if he could state from what source the better coloured forms may be obtained.

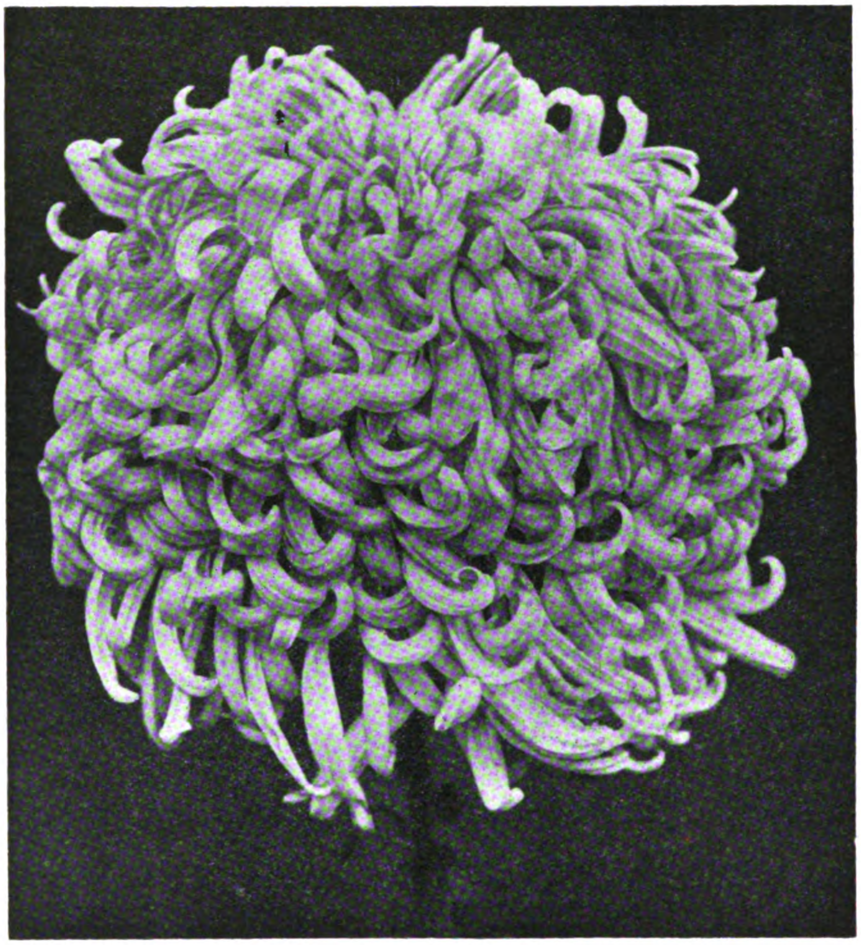


FIG. 120.—CHRYSANTHEMUM THOS. W. POCKETT.

R.H.S. Award of Merit, November 4; N.C.S. First-Class Certificate, November 6 (see pp. 324 and 341).

I had occasion, two or three years ago, to remove a plant of Cercidiphyllum, about ten feet high, which was encroaching on a fine plant of Euonymus alatus (also a most beautiful, autumn-coloured plant), and now find that the Cercidiphyllum, which was carefully replanted, has greatly improved its autumn tints; this season it has been quite a picture. This improvement has suggested that possibly a course of root-pruning in the case of larger specimens might also improve their colouring; it is certainly worth a trial where the plants are too large to transplant with safety. *A. T. Harrison, Culzean Castle Gardens.*

SHRUBBY CLEMATIS.

This popular genus includes some of the most beautiful climbers as well as some very useful non-climbing border plants, such as Clematis heracleaefolia, C. recta, and C. integrifolia. It is somewhat surprising that these shrubby species are not more frequently cultivated. C. recta, a deciduous species, produces huge clusters of snow-white flowers on long stems from July to August, and grows from two feet to three feet tall; C. recta grandiflora, though dwarfer in stature, has larger flowers of a purer white, and the plant is very free-flowering; C. recta Pallasii purpurea is a most effective plant by reason of its purplish stems and foliage, and numerous creamy white flowers; C. recta plena, a very uncommon plant and extremely pretty, has double, pure white, button-like flowers that are produced in clusters on stems from two feet to three feet tall.

Clematis heracleaefolia Davidiana is quite distinct from those enumerated above, having tubular flowers of a delicate shade of pale blue Hyacinth-like flowers, produced in whorls on stout stems two-and-a-half feet tall; Clematis integrifolia has large, bell-shaped flowers of a delightful deep blue, followed by very ornamental seed heads.

The above are all deep-rooting plants; it is therefore necessary to trench the ground in which they are to be planted and enrich it with well-decayed manure. All these Clematis are perfectly hardy, requiring a sunny position. For purposes of cut flowers they have all the qualities needed—they possess long stems, good form, fine colour, and they last well if cut when in a young condition and early in the day. *W. Logan.*

PERNETTYA MUCRONATA.

Although the Prickly Heath is more frequently seen than it used to be, one still wonders why it is not more popular. For in spite of the enormous numbers of new Berberises and other berry-bearing shrubs recently introduced, Pernettya mucronata, as represented by its many varieties, still easily holds its own as one of the most distinctive and beautiful of all autumn- and winter-fruiting shrubs.

It is a native of southern South America, and not absolutely hardy in all places, but one rarely ever hears of it being injured by frost, even in our colder counties. Its small, dark-green, leathery leaves, wiry branches and dense habit all enable it to withstand exposure to wind, and it appears to be indifferent as to soil and situation. Our own groups are, for the most part, in the shade of large Oaks, the soil being a light, rather dry loam. The plants never fail to berry profusely every year, and though they receive no attention whatever, the clumps are always shapely and the plants in the best of health.

The little, snow-white Erica-like flowers appear from May onwards, these being succeeded by the berries, which ripen in autumn and remain on the branches until the following spring, and often until the new crop is forming. Birds leave the fruits alone, but mice may steal a few in severe weather. The colour of the berries, some of which are as large as Marrowfat Peas, varies from pure white to blush-pink, coral, rosy-lilac, and a vivid blood red. The varieties usually listed and bearing this wide assortment of berry tints are often known as the Davis hybrids, P. angustifolia being the original seed-bearing parent of the group from which the stock originated.

In some gardens the Pernettya fails to fruit freely. This, in my experience, is due to the plant growing in an excessively rich and moist soil. A certain amount of root restriction, or congestion of the plant, is also doubtless efficacious in producing a heavy crop of fruits, plants put in too far apart, especially in a free, good loam or peaty soil, being apt to sucker too freely at the expense of their decorative qualities. Close planting in groups may also be recommended for other reasons, and it is well to note that Pernettyas make a very attractive ornamental hedge where this does not need to be over two feet in height, which is the average stature of the shrubs.

PENTSTEMON CORDIFOLIUS.

This attractive shrub has, in spite of our dismal summer and autumn, been flowering profusely without a break since June, and it is to-day (November 1) quite gay with bloom. Though needing the shelter of a warm, sunny wall in most districts, P. cordifolius will endure a good deal of frost so long as its base is protected, for, even though its branches may suffer, strong shoots will usually break from the root in spring, and these flower the following summer.

P. cordifolius may be described as a semi-climbing shrub with a tendency to arch its branches after the manner of a Bramble. Thus, in its native California, it may be seen hanging over a rock, or pushing through the branches of other things and sweeping over into the sun. The length of its growths is from four to six feet, but they may exceed that against a wall. These elegant branches are well furnished with heart-shaped, leathery, glossy, dark-green leaves, and it is from the axils of these that the short, flower-bearing laterals of the year are borne. The flowers, about an inch-and-a-half, or more, in length, are tubular and of a reddish scarlet.

The soil for this shrub should be light and warm, yet not lacking in moisture during the growing season. In the absence of any other support, broad-meshed wire-netting, or lattice, may be provided, but in mild localities where open ground culture is possible P. cordifolius is more pleasing when allowed to hang naturally over a rock or low wall. *J. N. Wales.*

RHODODENDRONS.

VI.—RHODODENDRONS IN THE GARDEN.

(*Continued from page* 321).

The creepy, crawly Rhododendrons of the "Campylogynum" and "Saluenense" persuasion are all very well in their way. They are curious and unexpected and exotic and odd; but they are hardly beautiful. No sensible grower, restricted to a couple of dozen Rhododendrons, would burden himself with such queer plants. They do not make enough show, and their shrill appeal for notice is based on botanical rather than on aesthetic grounds. The beginner, at any rate, will be wise to experiment with nothing smaller than the largest of the "Lapponicums" and "Cephalanthums"; and wiser yet, to begin with the more robust bushes.

But though the biggest species of all are fair-sized trees, attaining forty or fifty or even sixty feet in height, it must not be forgotten that in this country they are hardly likely ever to attain such dimensions. Moreover, in any case, a decade or two must elapse before they attain to large size, and long before then they will have flowered, giving no small joy with their big hemispherical trusses, borne at the twig ends on platforms of immense, dark green leaves. The Rhododendrons of this type belong chiefly to the "Falconeri" and "Grande" type.

Rhododendron arboreum itself is the *doyen* of tree Rhododendrons; but it is not quite hardy, except in the wettest Atlantic coast localities. In order to obtain the effect of this fine species, it is necessary to use hybrids, such as Altaclarense (arboreum × ponticum) or better still, since Altaclarense itself is practically unobtainable, one of the numerous crosses between Altaclarense and R. catawbiense, such as Blandyanum, these latter flowering some two months later than R. arboreum itself or even its first crosses. R. insigne, a fine hardy species of the same race from China, though in cultivation, is not to be had in the open market and R. Delavayi, the blood-red Chinese arboreum is no more and no less hardy than its Sikkim twin. Of the "Grande" series, about a dozen species have been described, but we will heed only the Sikkim R. grande, known also as R. argenteum. It forms a twenty- or thirty-foot tree of slender habit, bearing big leaves brilliantly silvered on the reverse and large trusses of oyster-white flowers (sometimes flushed pink) with crimson blotch, which appear in April. The breaking leaf buds are very long, the scales bright pink and the erect leaves a silky silver. Being a forest species it needs shelter from wind and sun, so that it is best grown on a north slope. Its Chinese equivalent, R. sino-grande, has still larger leaves, sometimes as much as thirty inches in length and pale Daffodil-yellow flowers with a splash of crimson on the upper lobe and brick-red anthers. It also is in cultivation—and, indeed, flowered for the first time in 1922 at the tender age of eight; but it is as yet rare on the market. R. sino-grande scattered in its native forests, forms a magnificent tree, forty feet high; or at its upper limit, it grows socially, forming a gnarled tree bearing a great crown of branches. It flowers in April.

R. sidereum is a fine, yellow-flowered, bushy tree species from the Burma-Yunnan frontier, but though in cultivation, it is not yet on the market.

One of the biggest tree Rhododendrons is the American R. maximum which reaches forty feet and is perfectly hardy. Like R. Metternichii, a much smaller plant, it belongs to the "Ponticum" series, which are north temperate plants of Europe, Japan, America, and central Asia. The flowers of R. maximum are white to rosy-purple. The species has been much used in hybridising. The leaves are ovate lanceolate, leathery and glabrous (the calyx is obsolete, as in R. ponticum). Flowers at midsummer. Finally we come to the "Falconeri" series—trees with big leaves, the under surface of which is covered with a thick rust-red Cinnamon or chocolate felt and regular flowers in large pompon-like trusses. The bell-shaped corolla is ten-lobed and there are more than twenty stamens.

R. Falconeri itself was introduced from Sikkim many years ago, but twenty years elapsed before it flowered from seed in this country. Some specimens were thirty years of age and fifteen feet high when they first flowered, though it seems hardly credible that they ever reach such an advanced age without flowering in their own country under normal conditions. It attains a height of over thirty feet. The flowers of R. Falconeri are cream with a purple blotch. R. Hodgsonii is similar, but smaller, with smaller leaves and rosy-lilac flowers. R. arizelum of the same series is a plant of the Burma-Yunnan frontier, where it forms forests almost single-handed round about 11,000 feet. It is in cultivation, but has not yet found its way to market. The flowers are cream with a purple blotch at the base of the corolla, and the large leaves are furred with a thick rust-red lining. As a tree it hardly exceeds twenty feet in height and is much gnarled and twisted. R. fictolacteum is very similar.

Another fine species which should be procurable in the near future is R. basilicum, a big-leaved Chinaman, attaining, under favourable conditions, thirty feet at maturity. The flowers are said to vary from pale yellow to deep crimson. The leaf felt is Cinnamon. It is important to remember that the big-leaved "Grande" and "Falconeri" Rhododendrons are forest trees found in regions of heavy rainfall, and therefore not only well sheltered, but, as a rule, heavily shaded also. Naturally they require something similar when transplanted to alien lands—shelter, shade, and as much water as they can get. In nearly all the species the flowers are thick and fleshy, and the reason why they are so reluctant to flower or thrifty of bloom with us, is almost certainly owing to the shortage of water. They are exhausted with thirst, which, seeing that they come from regions where the rainfall is anything from eighty to a hundred and twenty inches per annum, is hardly astonishing.

The following tables, made up of tried species, all of which are in commerce, will be found useful. I have purposely refrained from naming an excessive number of species as they tend to confuse the beginner.

SELECT SPECIES.

Trees (twenty-five feet and over):—R. Falconeri, R. arboreum, R. Hodgsonii, R. grande, R. sino-grande.

Small trees (fifteen feet to twenty-five feet):—R. barbatum, R. Smithii, R. auriculatum, R. Fortunei, R. habrotrichum, R. maximum, R. campanulatum, R. callophytum, R. Ungernii, R. strigillosum.

Bushes (five feet to fifteen feet):—R. Thomsonii, R. Wightii, R. campylocarpum, R. racemosum, R. Augustinii, R. Smirnovi, R. fulgens, R. Roylei, R. decorum, R. yunnanense, R. discolor, R. lutescens, R. lanatum, R. sutchuenense, and R. rubiginosum.

Undershrubs (three feet to six feet):—R. Souliei, R. cephalanthoides, R. orbiculare, R. dauricum, R. Keiskei, R. quinquefolium, R. glaucum, R. apodectum, and R. hippophaeoides.

Dwarf (one foot to two feet):—R. Williamsianum, R. intricatum, R. fastigiatum, R. Sargentianum, and R. sphaeranthum.

It will be observed that there are fewer species among the extreme forms—big trees and dwarfs—than amongst the shrubs and bushes, to which the bulk of known species belong.

The flowering season of a few species is given to aid the collector. By combining this table with the next, on colour, a judicious selection may be made to suit most tastes.

February: R. dauricum.

March: R. moupinense.

April: R. Fargesii, R. Williamsianum, R. racemosum, R. sino-grande, and R. hippophaeoides.

May: R. yunnanense, R. Roylei, R. cinnabarinum, R. barbatum, and R. Fortunei.

June: R. campylocarpum, R. discolor, R. fulgens, R. lanatum, and R. brachycarpum.

July and later: R. auriculatum, R. maximium, and R. Ungernii.

The colour of a few species is given in the following table. Many of the flowers are spotted or blotched with a slightly darker edition of the ground colour.

White: R. decorum, R. cephalanthoides, R. auriculatum, and R. Fortunei.

Yellow: R. Sargentianum, R. lutescens, R. Wightii, and R. ambiguum.

Pink: R. Williamsianum, R. orbiculare, R. racemosum, R. glaucum, and R. Souliei.

Crimson: R. Roylei, R. fulgens, R. barbatum, and R. strigillosum.

Lavender: R. hippophaeoides and R. intricatum.

Purple: R. dauricum.

Violet: R. fastigiatum and R. Augustinii (some forms).

Nearly one hundred species of Rhododendron have been mentioned in the preceding notes, of which about two-thirds can be safely recommended to anyone who will take a little time and trouble and go to a small expense over them. These would form the basis of a fine collection. It is impossible in a brief sketch such as this to recommend particular species; it must, of course, depend largely on the conditions in each case—size of garden, the purpose for which the plants are required and the amount of time and money which can be devoted to them, as well as on the individual taste of the grower. Where half-a-dozen species only are required, each person must select his own, with the assistance of the notes given. But confined to a dozen species we may assuredly proclaim with one voice that the following are, at any rate, in the first rank:—R. Thomsonii, R. Fortunei, R. auriculatum, R. campanulatum, R. yunnanense, R. racemosum, R. Roylei, R. Williamsianum, R. hippophaeoides, R. fictolacteum, R. campylocarpum, R. neriiflorum, R. calophytum, and R. Wardii. Applying our own tests of excellence and hardiness these would be hard to beat.

To the busy professional man who wants colour and display with the least possible risk and trouble, I recommend hybrids. Also in the case of gardens situated close to a large city where the conditions are far from ideal, hybrids are to be preferred to species; they seem to withstand the effects of soot better. The list, though representative, stands for but a tithe of the total number of species. Others might make a different selection—perhaps I would myself were I not bound by certain self-imposed limitations. The plants recommended are nearly all procurable in the open market, and most of them have a good record in different parts of the country. One cannot ask of them more than that.

A word in season. Much confusion now exists in the Rhododendron world. There are more names than Rhododendrons. The mere possession of a name, however alluring, is no proof of good citizenship. Nurserymen, being human beings first and nurserymen afterwards, are as liable as the rest of us to err; and the enthusiastic beginner, before buying a plant, would be wise to make quite sure of what he wants and quite sure he gets what he asks for. Common sense will suggest means for ascertaining the first requisite and checking, the second. *F. Kingdon Ward.*

(*To be continued*).

HARDY FLOWER BORDER.

SALVIA DICHROA.

This is a handsome plant suitable for the back of the mixed border in milder districts. It makes a large bush, six feet or more in height, with bold, dark-green leafage and branching flower stems, several feet in length. These latter bear throughout the earlier summer a long succession of deep lavender-blue and white flowers of good size and in some districts the plant will furnish another display in autumn.

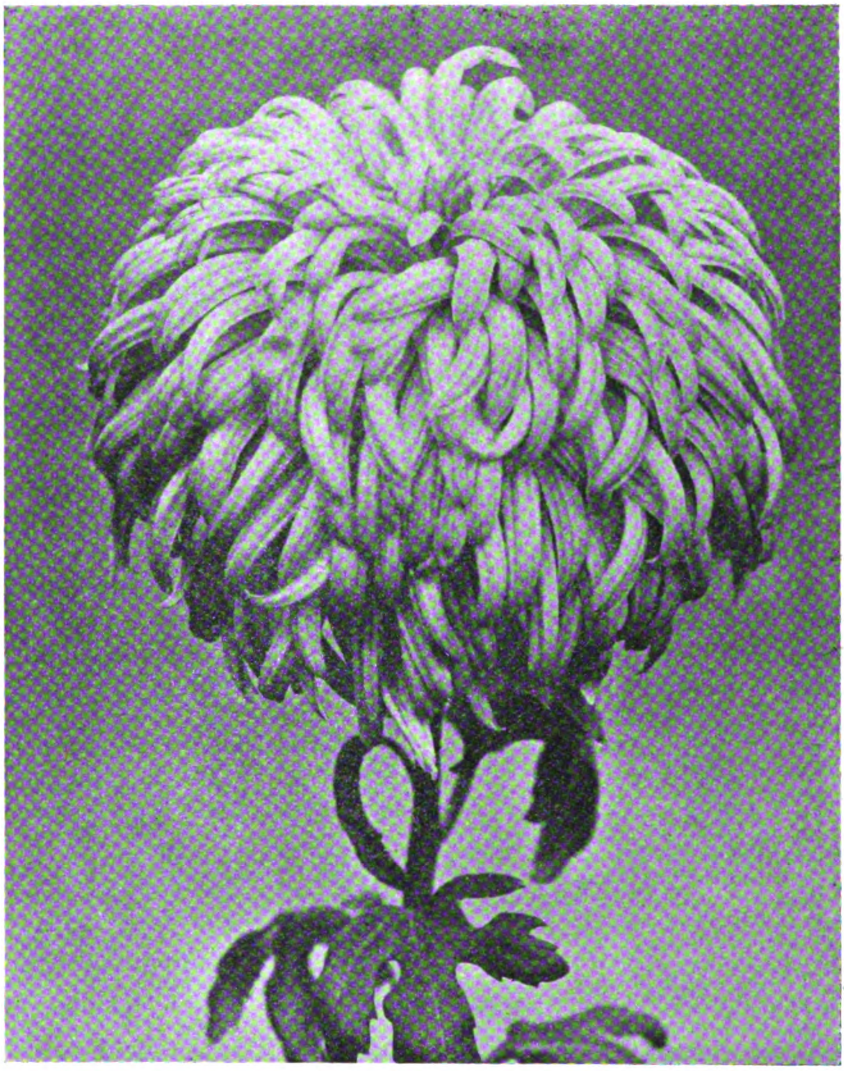


FIG. 121.—CHRYSANTHEMUM SUNBURST.

R.H.S. Award of Merit, November 4 (as Salmon Queen); N.C.S. First-Class Certificate November 6 (see pp. 324 and 341).

Though sometimes described as a biennial, S. dichroa is a true perennial, but although the summer growths die back to near the base in autumn (when they are cut off), the plant with us always retains a Mullein-like tuft of leafage throughout the winter. S. dichroa will prosper in any sunny border of average free loam and it may be easily and quickly increased by seeds. The plant is illustrated in *Bot. Mag.*, tab. 6004

MERTENSIA SIBIRICA.

It is rather surprising to read in a recent issue (p. 283) that Sir Herbert Maxwell has a difficulty in growing this plant, for we here (where climatical conditions must be very similar to those at Monreith) consider it the easiest of its charming race, and Mr. Farrer grew it without trouble at Ingleboro.

We grow our plants of M. sibirica (which I am informed is synonymous with M. ciliata) in a cool, gritty loam that is freely-drained, owing to its shaley composition and sub-stratum, yet one that does not dry-out very quickly in hot summers. A little leaf-mould may be mixed-in at planting time and the border gets a spring top-dressing of well-rotted vegetable refuse. Sir Herbert Maxwell will realise what the conditions are when I state that we have along with this Mertensia, and all doing well, such things as Mitraria coccinea, Tropaeolum speciosum climbing over Azalea Anthony Koster, Pieris formosa and Iris Delavayi.

In excessively wet seasons old plants of M. sibirica are apt to rot in autumn, which suggests that the soil might be more stony than it is, but there are usually enough self-sown seedlings to make good such loss. M. sibirica does not seem to like full exposure to hot sun in summer, but, even so, I do not think the plant would do as well in woodland. Thin shade at noon during summer would seem to be what it may need most. *A. T. Johnson, Taly-Cafn, North Wales.*

ACTAEA.

Actaea alba is a very showy North American plant suitable for growing in the shady border or beneath trees. The plant produces dense, showy spikes of white flowers during July and August, followed by snow-white berries.

Actaea spicata fructo-rubra is similar to the preceding, but has red flowers, which are succeeded by scarlet berries. The Actaeas grow from two-and-a-half feet to three-and-a-half feet tall, are perfectly hardy, and succeed in any well-drained, fairly moist soil. When established they are very effective garden flowers, whether in flower or berry.

AETHIOPAPPUS (SYN. CENTAUREA) PULCHERRIMUS.

This plant is one of the most decorative of the Caucasian hardy perennials and closely resembles the Sweet Sultan. The abundantly stately stems, from one-and-a half foot to two-and-a-half feet tall, are produced above the neat tufts of silvery grey foliage, and crowned with rosy-red or pink Centaurea-like flowers. The tawny or burnt appearance of the pappus is also very effective.

This plant is well suited to the front or middle row of the flower border or on the rockery. It produces its flowers during late summer and autumn and is perfectly hardy. It is a very desirable subject for furnishing cut blooms for house decoration *W. Logan.*

INDOOR PLANTS.

FLOWERING PLANTS FOR THE WARM HOUSE IN WINTER.

There are many beautiful flowering plants that may be easily cultivated with very little extra labour, suitable for the decoration of a warm greenhouse, conservatory, or mansion in winter, after the Chrysanthemums have passed out of bloom. Amongst them the following may be highly recommended for the purpose. Plumbago rosea and P. coccinea superba, two most useful plants, both very free-flowering and making the conservatory or mansion bright and gay. The panicles of P. rosea are erect, and coloured rosy red, whilst P. coccinea superba has erect panicles of deep rose flowers, forming graceful spikes, each of them often two feet in length. When fully grown these plants are very ornamental subjects for decorative purposes, especially at a time of the year when bright flowers are scarce.

Cuttings of side shoots or of half-ripened wood root freely during the summer in sandy soil placed in moist bottom-heat under a frame or hand-light. The plants thrive best in a mixture of rich, turfy, loam, fibrous peat, or leaf-mould and sand. They require a winter temperature of 50° to 55°, and in summer 60° to 70°

Acalypha hispida (syn. Sanderiana) is remarkable for the long tassels of bright crimson flowers that are produced all the year round, even on young plants. It is a great acquisition and may be grown in any warm, moist house. This Acalypha is easily propagated from cuttings inserted in bottom heat.

Jacobinia chrysostephana (syn. Justicia) is an extremely attractive plant for the winter. The flowers are bright golden yellow and borne in dense-flowered, crown-like corymbs at the tip of the branches, forming a striking contrast to the green foliage. It is a valuable subject for the conservatory in winter. The plant is of easy culture and cuttings root freely in moist bottom heat, but they must not be allowed to flag. After the plants have done flowering cut off the old flower truss and allow it to break to furnish shoots suitable for use as cuttings which, when rooted, will be ready by March or April for flowering next winter. By placing three or four rooted cuttings together in a five-inch or six-inch pot, they will give a grand display when in flower. This Jacobinia needs a winter temperature 55° to 60°, and a summer temperature of 65° to 70°. J. coccinea, is a strong-growing species with bright scarlet flowers that make the conservatory gay during December to February. This plant requires similar treatment to J. chrysostephana. Old plants do not flower so finely as young specimens grown on as advised. Justicia carnea, rose, and J. speciosa, pale purple carmine, require similar treatment and are free-flowering, useful plants.

Thyrsacanthus rutilans is a very attractive warm-house plant bearing long, drooping panicles of bright crimson-scarlet flowers during the winter. Cuttings formed of half ripened shoots root readily in the early summer in bottom heat. Be careful not to over-pot these plants; pots five or six inches in diameter are large enough. When they are well rooted and just showing their flower buds, a little liquid manure once a week is beneficial to them.

Euphorbia (syn. Poinsettia) pulcherrima is one of the most popular and attractive of plants grown for all kinds of winter decoration, its rich, bright scarlet bracts, that remain attractive for several weeks, making the plant invaluable for decorative purposes. E. pulcherrima alba is a pure white variety but not so attractive as the scarlet type. Both these Euphorbias are increased by cuttings inserted in the spring; or when the old plants have done flowering they should be rooted singly in small pots filled with sandy soil, in gentle warmth, and not allowed to flag. When flowering is over they may be kept moderately dry, in a temperature of from 45° to 50°, for a couple of months before starting them into growth afresh. Be careful not to over-pot them for they do not thrive well if over-potted. A little liquid manure is beneficial to the plants when they are commencing to develop their flower buds. Euphorbia jacquiniæflora is a charming plant with long wreaths of orange-scarlet bracts and is invaluable for winter flowering in a warm conservatory. It should be grown in a well-drained five-inch or six-inch pot in soil composed of two-thirds rich, light loam, and one-third fibrous peat, or decayed leaf-mould, adding sand to lighten it. This species requires similar treatment to the Poinsettia.

Eranthemum pulchellum, an attractive, bushy, compact, free-flowering plant, remains in flower for a considerable time, which is an advantage at a season when blue flowers are scarce. Cuttings formed of the points of shoots when they are a little firm will root readily in bottom heat. Daedalacanthus parvus is an effective, rich purple-blue flower related to Eranthemum pulchellum, from which it differs in its dwarf habit and larger, bright blue flowers. The plant grows from eight inches to twelve inches in height. The flowers are densely borne on erect spikes terminating in branches and are about one inch in diameter. This plant is of easy culture, succeeding well in a warm greenhouse, and flowering during the winter. It requires similar treatment to Eranthemum pulchellum. Saintpaulia ionantha is a charming and most useful dwarf Gesneraceous plant, most suitable for the decoration of the warm greenhouse or for table decoration. It has rather small, ovate, spreading leaves of fleshy texture. From the centre of the leaves spring the numerous erect flower stalks, two to three inches high, each bearing a lovely, intense, Violet-like blue flower, the golden anthers standing out in beautiful contrast. It is a very free-blooming plant, easily grown from seed, and flowers within six months of raising, and continues to bloom throughout the winter. It is a cheerful plant for the front row on the greenhouse stage. *John Heal, V.M.H.*

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

LEPTOSYNE STILLMANNII.

This annual, which has yellow, Coreopsis-like flowers, comes into flower very quickly, and is best raised from seeds sown about the beginning of February, in a cool house. The young seedlings should be pricked off into boxes and when large enough may be potted into five-inch pots, in which they will flower. Successful cultivation presents no difficulty, as this Leptosyne grows quite well in any good potting compost, but perfectly cool and airy conditions are essential. It grows about one foot in height and is quite useful for decorative work and for a supply of cut flowers.

LEPTOSIPHON ANDROSACEUS AND L. ROSEUS.

There are several varieties of these pretty, Californian annuals, and they usually grow from six to twelve inches in height. They should really be included under Gilia, but I retain the name under which they are generally known in gardens.

A goodly range of colours is now provided, including rose, white, lilac, purple, and varying shades of yellow and orange. Probably the plants are rather too small for the ordinary greenhouse, but they are delightful subjects for the small, unheated greenhouse. Seeds should be sown thinly in shallow boxes at about the beginning of February, and when large enough the seedlings should be pricked off about six inches apart in pans, in which they should be flowered, or several plants may be placed in a 48-sized pot. Plenty of air and free exposure to the sun are necessary to good results. A free, gritty compost is desirable and careful watering is necessary, for, in common with most Californian plants of this class, they dislike excessive moisture.

LINARIAS.

There are several very pretty annual species of Linaria useful for pot culture. They include L. aparinoides in several varieties, L. bipartita, L. maroccana, in a variety of colours, and L. reticulata aureo-purpurea, with deep purple and orange flowers. Under pot cultivation they all attain a height of twelve to eighteen inches, and as they come quickly into flower, seeds are best sown in a cool house from the middle of February to the beginning of March. When the seedlings are fit to handle they should be pricked off several inches apart in 48-sized pots, in which they may be flowered.

Some growers prefer to sow seeds directly into the flowering pots, afterwards thinning to the required distance apart, but if pricked out they are more inclined to produce a number of shoots from the base, which, of course, is a distinct advantage. The successful cultivation of these plants presents no difficulty, provided cool treatment is afforded during all stages of their cultivation.

LINUM GRANDIFLORUM.

The Carmine Flax is a fine hardy annual which flowers for a long period out-of-doors, but is also a pretty pot plant. Seeds should be sown in a cool house about the middle of February directly into their flowering pots—five-inch or other suitable size. Seeds may also be sown in seed boxes or pans, afterwards pricking out the seedlings several inches apart in the flowering pots. As is the case with other slender-growing annuals, pricking off has the effect of making it develop shoots from the base. If grown under cool conditions and freely exposed to sun and air the plants should not require any supports. This Linum has one fault—its flowers remain closed during dull weather. *J. Coutts.*

PUBLIC PARKS AND GARDENS.

The suggested removal of Bethlem Hospital in the Lambeth Road, London, to another district, would release an area of twelve acres, which it is suggested might be devoted to the purpose of a public park. The matter is being considered by the Metropolitan Public Gardens Association, whose Secretary, Mr. Basil Holmes, points out that the Hospital grounds could be made to constitute one of London's most important lungs. He suggests that it might be possible to use the building for some public purpose and to allow the public access to the grounds.

The Unemployment Grants Committee has recently approved schemes in the Manchester Parks amounting to £52,900. The schemes include the conversion of a number of grass tennis courts into shale courts and the formation of new tennis courts; the making of a sunken bandstead; a considerable amount of tree planting; renovation of paths, and levelling and draining of playing fields. The laying out of a new recreation ground recently acquired at Newton Heath is also included. During the past four years the Manchester Parks Committee has carried out improvement schemes for the relief of unemployment costing, including the present schemes, nearly £240,000.

The Ministry of Health has given sanction for the purchase of the Woodhouse Estate, Yorkshire, as a public park and open space for the Borough of Brighouse. The park is adjacent to some of the most beautiful woodland in the district, and the locality is a very popular resort in the summer months. The estate comprises a mansion and some beautiful gardens, overlooking agricultural land, with distant prospects of the Kirklees Woodlands in one direction, and the moors towards Penistone in the other. The estate comprises some twenty acres, and the purchase price is £4,000. Woodhouse has a very long history, for the first mention of the estate in the Wakefield Manor Court Rolls is in 1272.

THE MISTLETO AS A CULTIVATED PLANT.

At the Chrysanthemum show held in Paris during October, many visitors were greatly interested in, and puzzled by, a batch of over fifty little shrubs growing in pots and bearing at the top of their stems, about a foot high, little tufts of the common Mistleto. These plants were exhibited by M. J. Graef, of Orleans, and were the result of ten years' efforts to grow this popular parasite in a pleasant shape, fruit it, and keep it for years in the form of a living, small shrub, much like a dwarf Japanese tree, for indoor or garden decoration.

The grower stated that his Mistleto plants were raised from seeds sown on the small stems of young Paradise Apple trees. These latter were potted when well rooted, and the Mistleto berries were squeezed into a notch in the bark, just as happens in nature. Two or three years elapse before the Mistleto becomes a little tuft of about nineteen to twenty leaves, the growth being very slow in the earlier years.

As the stem of the stock was cleanly cut just above the tuft of Mistleto, and the labels stated that some specimens carried both male and female plants upon the same stem, two questions arose, to which M. Graef gave the following explanations.

To obtain the two sexes on the same plant he was obliged to insert many seeds on the same stem, but he could detect the sexes of his plants before they flowered by means of minute differences in the seeds. Regarding the combination of the Mistleto with the Apple stock, M. Graef observed that the top of the young Apple tree was not cut back to the saprophyte until the Mistleto tufts had produced sufficient leaves to elaborate sap and cause the plant to live and grow. M. Graef stated that he had examples of Mistleto which continued to grow and carry berries five or more years after the host plant had been cut back. *S. M.*

PLANTS NEW OR NOTEWORTHY.

FRAXINUS AMERICANA ASCIDIATA.

At the recent meeting of the Scientific Committee of the Société Nationale d'Horticulture de France, Messrs. Vilmorin showed some specimens, from the arboretum at Verrières, of a curious Ash, in which the terminal and sometimes also the neighbouring leaves have their bases modified into pitchers. (Fig. 122).

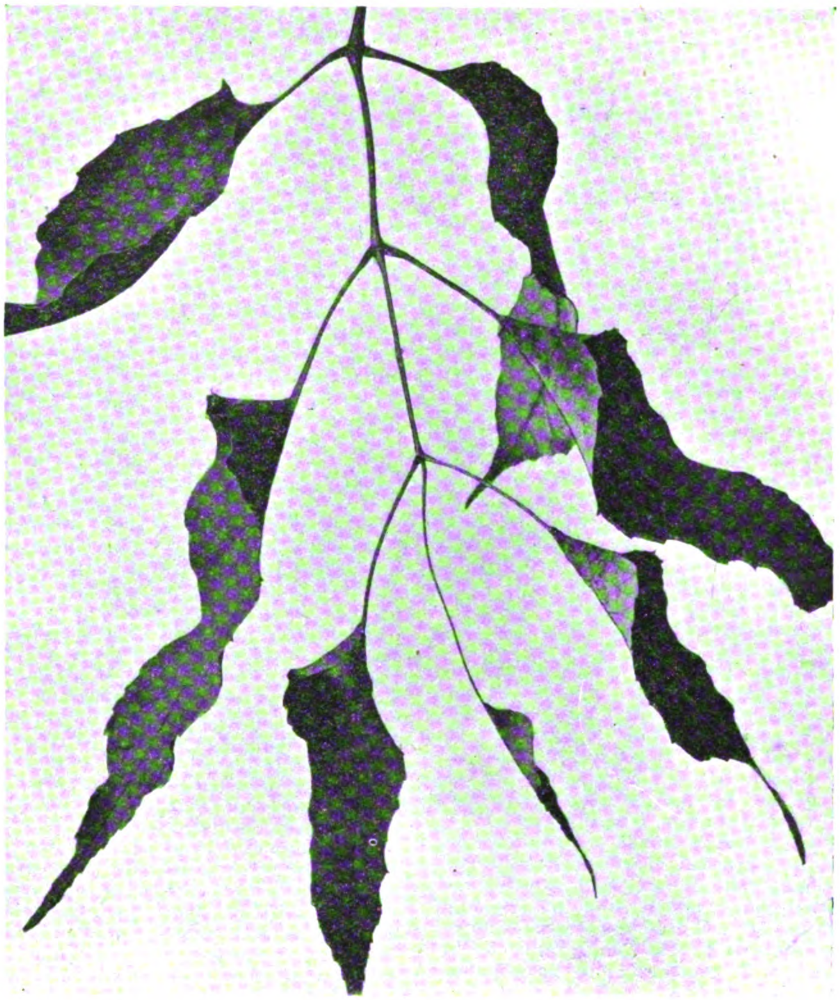


FIG. 122.—FRAXINUS AMERICANA VAR. ASCIDIATA.

The tree presenting this anomaly was discovered a dozen years ago by Dr. George H. Shull in the neighborhood of the Station for Experimental Evolution, at Cold Spring Harbour, Long Island, New York. This curious variation was found only on certain trees of Fraxinus americana, and, even so, only in a restricted area measuring about a hectare. Outside this area not a single tree exhibiting the peculiarity in question was found. Dr. Shull effected several crosses and found that the "ascidium" character behaved in the manner of a dominant one.

A specimen of three years' growth was sent to M. Philippe de Vilmorin under the pedigree number 1456 (183), and was planted in 1915 in the arboretum at Verrières, after an eventful voyage lasting nearly three months, during which the plant began to grow. It was not, in fact, received until the beginning of June; it recovered, however, and afterwards grew vigorously, so much so that in November, 1915, it was possible to send to Dr. Shull detailed reports on the number and ramification of the "pitchers." It is now a young tree measuring four metres in height.

It is generally known that this curious anomaly, which is the result of the union of the organs by their edges (usually in the case of the leaves), is not very common, though it is known to take place in a great number of species. Casimir de Candolle gave a list of over forty species (including Fraxinus Excelsior) belonging to genera of the most diverse character. Cabbages frequently show the phenomenon in their foliage; but it is among the species of Saxifraga which belong to the group Megasea (crassifolia, ciliata, ligulata, etc.) that it is most frequently met with.

Its morphology and histology have been investigated by MM. Maheu and Gillot (*Journal Botanique*, Paris, 1905, p. 27; see also Gillot, "Notes de Tératologie végétale, 1904-1906."

I am of opinion that, with the exception, naturally, of plants which normally form pitchers, such as Nepenthes, etc., no plant has hitherto been discovered which exhibits the phenomenon in question more regularly and constantly than the Fraxinus of Dr. G. Shull. *A. M.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

CROCUSES.[*]

At the present time the genus Crocus stands very much where it stood nearly forty years ago, when Maw published his *Monograph*. The geographical distribution remains the same, and China, which has enlarged the boundaries of so many old genera, has added nothing to the genus which, apparently, is alien to it.

Such few additions to the genus as have been made during the present century are, in the main, the outcome of Mr. Bowles's patient investigations of the species and their varieties, and in placing the preparation of this Handbook in his hands, the publishers have gone to the fountain head.

Of the few new species enumerated in the book, C. niveus, which has no place in the index, is the author's name for the Crocus Heldreich named C. marathonisius in 1876. Subsequently, in his *Monograph* Maw expressed the view that it was no more than a variety of C. Boryi, and though in 1900[†] Mr. Bowles made a new species of it as C. niveus, he withdrew his determination next year[‡] in favour of Heldreich's original determination. Now, however, he returns to it.

C. Leichtlinii (p. 142), which Dewar described as a variety of C. biflorus,[§] is now promoted to specific rank, and the author proposes to make a new species—C. dispathaceus—out of Mr. Egger's 1912 autumnal-flowering form of C. Tauri, as it was thought to be by its discoverer, but does not tell us if it breeds true from seed.

Mr. Bowles would make a new species, too, of a beautiful late-flowering Crocus which came, not many years since, from the Carpathians under the old name, C. Heuffelianus. C. moabiticus is another Crocus subsequent to the Monograph, as are C. Mouradi,[||] C. Autranii and—provisionally—C. Jessoppiae.

Among new forms are a lemon-flowered Caucasian Crocus Mr. Bowles thinks may be C. vallicola var. citrinus; C. oblanus and the many lovely C. chrysanthus varieties with blue ground on the inside of the petals, of which Maw makes no mention, probably because they had not come under his notice. Mr. Bowles suggests that the blue ground colour may be due to the influence of C. aerius. C. chrysanthus provides the author with material for several interesting pages on the many beautiful forms of that most variable species, raised by Mr. Hoog and above all by himself, the latter so happily named after the feathered tribe—"Siskin," "Silver Pheasant," "Bullfinch," and so on. Thanks to the generosity proverbial among gardeners, these forms have found their way to many gardens, and have helped to interest keen amateurs in a genus which, except as regards the Dutch Crocus and garden varieties of C. vernus, is still but little known outside a comparatively minor circle.

This apparent neglect of the majority of Crocus species, which, as the author tells his readers, "are quite as easy to grow as most flowers worth having," is inexplicable, though we suspect that the difficulty of obtaining corms or seeds of the rare species and varieties seldom found in trade lists has some bearing on it. According to the author, the neglect cannot be because of any supreme difficulty in the cultivation of the less well-known Crocuses, for we have his assurance "that any ground sufficiently well tilled to grow a decent Lettuce or Onion should grow Crocuses to perfection."

Few of those who have seriously attempted the cultivation of Crocus species in the open would be inclined to place it quite so high as that, and the probability is that, like other men who have turned a genus inside out, as it were, the author, in his natural enthusiasm, unconsciously minimises the difficulties attendant on the growing of the genus in general. The author's view point is analogous to that of a gardening colleague of the late Mr. Clutton-Brock, of whom the latter had begged some Lily bulbs. "Send me those you grow in your sleep," Brock wrote, "and I may manage them; the others I can only grow in my dreams."

But, though assuming in his readers rather more than an elementary knowledge of the ways of Crocuses, the author does his best to help others to grow them, and devotes some pages to their cultivation. His ideal soil is one "deeply tilled and rich in humus," and though that is a little vague, the author is not against somewhat heavy soil "so long as it is well drained." The essential point is that the corms should lie in light, warm soil. If, however, the soil factor is so simple of solution as it seems to be, the climatic factor is not so easily disposed of; indeed, we suspect that if several vernal species were not so precocious, they would find a place in many gardens where they are now unknown. Crocuses which habitually bloom in January and February have about as much chance of a fair innings in inland gardens as the precocious Rhododendron species, and the flowers are so transparently delicate as to render their escape from the rigours of our climate almost a miracle. To see the lovely flowers of C. dalmaticus and other early species dashed to pieces in the open in four years out of six, calls for a deeper fund of enthusiasm and tenacity than many mortals possess. It drives the determined to the security of the cold greenhouse, and leads less tenacious to relinquish a battle in which the odds are so much against them. The author refers to a frame as a useful adjunct to the vernal Crocus bed; it might perhaps be more properly described as almost a necessity, though not because of any tenderness on the part of the corms.

Gardeners who have not assisted at a *post-mortem* examination of Crocus or Colchicum will find the chapter on Botanical Characters of absorbing interest. In this chapter the botanical characteristics are set out in simple language. A representative of each is laid on the table and under the reader's eye is dissected limb from limb with the precision acquired in years of practice under the green lamp-shade. In the same chapter the author hazards the interesting speculation that the Crocus of to-day may have had some prehistoric Romulea as an ancestor; and in the Iris-like Crocus iridiflorus sees some trace "of a line of development which, though I. sisyrinchium led on to the Bearded Irises in which the beard may be analagous to the tufts of hairs found in the throats of many Crocuses."

The keen eye of the naturalist impels him to bring pen to paper time and again with some acute observation, as for instance, in the colour change following the closing of certain Crocuses with brilliant insides and dark outsides. This is comparable to a similar change in the Red Underwing moth: "On the wing the scarlet underwings render it attractive to birds, and I have seen the moth pursued by sparrows when I have disturbed it, but so soon as it settles in a Willow tree, and the grey, upper wings are folded over the scarlet underwings, it is so nearly indistinguishable from the bark of the tree that the bird flies on, looking for a scarlet moth."

The Saffron Crocus has an interesting chapter to itself, in which the author draws on his profound knowledge of the literature of the genus, and in five chapters Colchicum is fully and fairly dealt with.

To write a book on a little-known genus and illustrate it as well is given to few men. In this instance, Mr. Bowles has followed Mr. Maw's example, and for all that the drawings have necessarily been robbed of their colour, the association of pen and brush is felicitous and satisfying.

Such a book as this is long overdue, for Maw's *Monograph* is beyond the reach of most gardeners; now that it has come there is much to praise and little to carp at. Misprints are rare, but the book is worthy of a better index. In the case of a standard work of reference such as this will doubtless become, the importance of a full index should have been appreciated by author and publisher. A mechanical point is the insecurity of the adhesive attachment of the plates to the pages.

A BIBLIOGRAPHICAL CURIOSITY.

In *The Gardeners' Chronicle* for July 6, 1918, I drew attention to a work which had then recently come into my possession. It was a literary fraud, for the plates which had been manipulated for the purpose of deceiving the purchaser were all reproduced from a very old work known as *The Compleat Florist*, first published in 1740, but which is more commonly known in the bookselling world in an edition of 1747. In *The Compleat Florist* there are exactly one hundred engraved plates of flowers—each one is numbered; in the top left-hand corner the time of flowering is given, and at the foot is the name of the subject figured; with slight cultural directions. In a few of the earlier plates we get the name of the florist who grew the flower, an interesting fact, in the light of latter day development of our great metropolis. Thus Palto Auri-flame Tulip was from Mr. Kingham's in Lambeth, Marsh; the High Admiral Anemone was from Mr. Giles's, at Tottenham Court; the Spanish Jasmine, from Mr. Sampson's at Hoxton; the Yellow Colutea, from Mr. Bowen's at Lambeth; the White Lilly (*sic*), from the late Mr. Fairchild's at Hoxton, districts that have long ceased to be the abode of florists or nurserymen. The title of this fraudulent reproduction is *The English Flower Garden—Le Jardin de Fleurs Anglais*. There is no publisher's name or date, and although my copy is imperfect and contains only eighty-seven plates out of the original hundred, I was under the impression that it might have been published with the full number of them. Apparently this was not so, for at Mr. Arthur Paul's sale another nicely-bound copy of the book appeared, containing ninety of the plates from the original *Compleat Florist*. This volume was offered by a well-known London firm of second-hand booksellers to the Lindley Library, but was not accepted. I have now come into possession of another curious, and practically unknown reproduction of *The Compleat*

---

[*] A *Handbook of Crocus and Colchicum for Gardeners*. By A. E. Bowles. 185 pp. Martin Hopkinson & Co., London. 12/6 net.

[†] The *Gardeners' Chronicle*, Vol. XXVIII., November 10, 1900, p. 335.

[‡] The *Gardeners' Chronicle*, Vol. XXIX., January 19, 1901, p. 40.

[§] The *Gardeners' Chronicle*, Vol. IX., February 21, 1891 p. 235.

The Garden, Vol. XXXV., p. 473.

Florist's plates. Both the spurious copy alluded to and my more recent acquisition, are folio in size—the original is octavo. It is probable that some of the copper plates from which *The Compleat Florist* was first printed were lost, or damaged, as the number is not complete in the work now under consideration. The following is a brief description of my new find:—It is a folio in one volume, measuring 13¾ inches by 9¾ inches, bound in plain grey boards. It has a coloured frontispiece of the common Iris, which was not among the subjects figured in *The Compleat Florist*, but is evidently a much later production. As in the case of that work there is no letter-press, the plates themselves conveying the necessary instructions for cultivation. The date of publication is problematical, but I should think it was prior to the issue of the so-called *The English Flower Garden*, my conjecture being based solely upon the style of type used in printing the title page. From about 1770 to 1800 is approximately the period when it seems to have been published. The following is a copy of the title page, in the middle of which is a coloured vignette of a garden scene:—

FLORA LONDINENSIS, or, the Flower Garden Displayed; on ninety-seven plates of Elegant Figures of Flowers, Plants and Trees; the Production of the Gardens in and round London. Drawn from Nature by a Botanical Painter, and accurately engraved by an Eminent Artist, with a description of each flower, its culture, &c.

Then follows a little quotation in inverted commas, "The fresh verdure which they exhibit in the Spring, the various shades which they assume in Summer, the yellow and russet tinge of Autumn, and the nakedness of Winter, afford a constant pleasure to a lively imagination."

The imprint runs—"London: Printed for the Proprietor, No. 31, East Place, Lambeth; and sold by H. D. Symonds, No. 20, Paternoster Row. Price three Guineas plain, five Guineas coloured after nature." Of course, possessors of *The Compleat Florist* can do without this slightly incomplete reproduction of it, but the book collector who is interested in editions will regard it and the other production in a different light from that of the student of ancient floriculture. It is unquestionably a fact that this *Flora Londinensis*, although bearing the same main title as William Curtis's work, is an extremely rare book and may, if known, have been thought by bibliographers to have been the same. From the days of Weston onwards it cannot be found recorded in any garden bibliography I have consulted.

A NEW PINETUM.

THE pinetum at Bayfordbury, near Hertford, owned by Mr. Clinton Baker, is well known in the South of England, and Mr. Baker himself is even more generally known among Conifer lovers as the author of that fine three-volume work, *Illustrations of Conifers*—undoubtedly the most sumptuous and best illustrated work in existence on the subject.

The Bayfordbury pinetum was planted by Mr. Clinton Baker's grandfather about ninety years ago, and has in times past been the subject of many notes and articles in *The Gardeners' Chronicle* by the late Dr. Masters and others. An estimate of its age and development may be formed by giving the dimensions of a magnificent tree of Pinus ponderosa which is now well over one hundred feet high, its trunk over ten feet in girth, a perfect column bare of branches for many feet up.

The object of the present note, however, is to record the foundation of a new pinetum on Mr. Baker's property which may in time become as famous as the old one. It is situated on rising ground at Bayford, about three miles from Bayfordbury, known as Bell's Wood. Mr. Baker made the first planting here about eight years ago and has been adding fresh trees annually since, as occasion has offered. The site is wooded and the clearings that have been made for the young Conifers are protected by a scattering of native trees left standing. The Conifers are small as yet, but most of them are succeeding very well and show a promising rate of growth. Mr. Baker is concerning himself here mainly with the newer and rarer species, and the collection already formed is extremely interesting.

The Japanese Douglas Fir, Pseudotsuga japonica (Fig. 123), is eleven feet high and bearing cones. I suppose this example of a very rare tree is the best in the British Isles, and is the only one that has reached the fruit-bearing condition. As may be judged from the illustration it is very distinct from the common Douglas Fir in the much smaller cones, which are only one-and-a-half inch to two inches long, and in the slightly notched apex of the leaf; the young shoots are also devoid of down. Its height in Japan is given as seventy feet to one hundred feet, so that it acquires a stature only one-third of that reached by its West American relative. Another uncommon Douglas Fir growing at Bell's Wood is Pseudotsuga macrocarpa, now about seven feet high. It is a Californian species remarkable for the large size of its cones, some of which are seven inches long by two inches wide. Both these species were introduced to cultivation in this country by Mr. Clinton Baker in 1910.

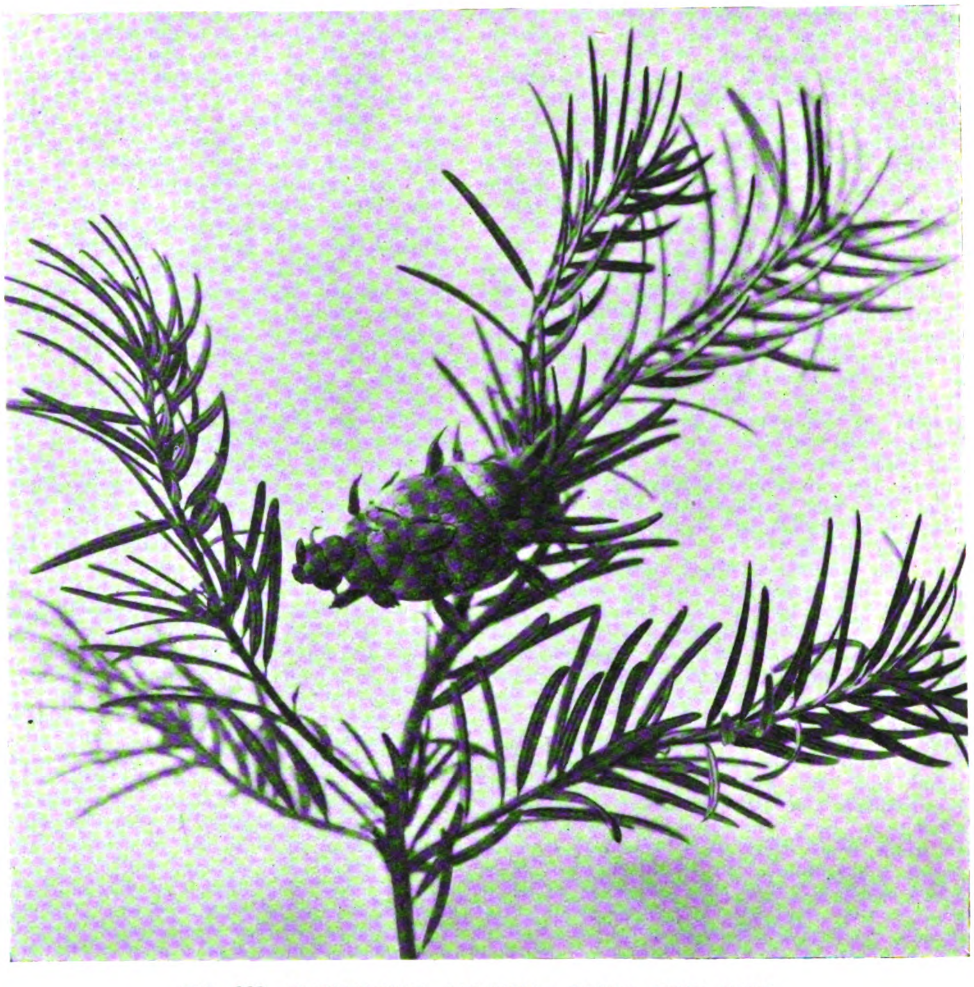


FIG. 123.—PSEUDOTSUGA JAPONICA; SHOOT WITH CONE.

Of the true Silver Firs, Abies Pindrow var. brevifolia is eighteen feet high; as the varietal name implies, the leaves are much shorter than in the type, and only about one-and-a-half inch long. A. sibirica, rarely seen in good condition, is ten feet high; A. Webbiana is twenty-three feet high and very healthy. Other interesting species are A. Mariesii, a rare Japanese species with young shoots thickly covered with reddish-brown tomentum; A. Faxoniana and A. recurvata, both introduced from China by Mr. E. H. Wilson, the latter being very distinct in its strongly recurved leaves.

The rarer Spruces growing here are the Chinese Picea asperata and P. likiangensis var. purpurea (the P. purpurea of Masters), the Himalayan P. morindoides, and a healthy specimen of P. Breweriana, the remarkable pendulous-branched species from the Siskiyou Mountains of California and Oregon.

Among the Pines, most satisfactory of all perhaps is Pinus Ayacahuite, but P. Montezumae, P. leucodermis and P. sinensis are also succeeding well, the last-named (one of Wilson's introductions) being fifteen feet high. The success of P. Torreyana, from California and P. Gerardiana, from the Himalaya, both difficult species, is more doubtful.

The rarest Cypress in the collection is Cupressus Duclouxiana, a new species from Western China, related to C. sempervirens; the specimen is very healthy, and I have only seen it elsewhere in Mr. P. D. Williams' garden at Lanarth, in Cornwall. Other notable Cypresses are C. formosensis, C. funebris, C. Macnabiana and C. obtusa var. formosana.

Among other rare Conifers, mention may be made of Libocedrus chilensis, twelve feet high, a very attractive tree; Keteleeria Davidiana, seven feet high; Tsuga Brunoniana and T. caroliniana, Saxegothea conspicua, and a number of Podocarpuses, including P. chilina and P. nubigena from Chile, P. Totara and its variety Halliana from New Zealand. *W. J. Bean.*

THE HEATING AND VENTILATING OF GREENHOUSES.

The economical and effectual heating and ventilating of greenhouses have been problems which the nurseryman has wrestled with ever since the commercial grower of fruits, flowers and vegetables under glass came into being, and yet—it must be confessed—he has not made the same progress in matters of fuel economy and methods of heating as he has in the improvement of his crops. The conditions prevailing in the greenhouse—air supply, humidity, and temperature—are dependent upon outside conditions, and it is the grower's desire, by means of correct heating methods to guard his crops against rapid fluctuations of temperature brought about by sudden climatic changes—a matter which up to the present he has not been able to perform to his own satisfaction.

It was this and a host of other problems which Mr. C. E. Shoults placed before the members of the Institution of Heating and Ventilating Engineers in a discussion on Heating and Ventilation of Greenhouses held recently at the Engineers' Club. Mr. Shoults stated the case of the Lea Valley growers lucidly, and in so doing mentioned the various systems of heating in vogue, many of which had their advantages and were satisfactory up to a certain point. The outstanding problems appear to be those of efficient control of temperature and the complete combustion of the fuel, whether it be forms of anthracite or varieties of coke. Much heat is wasted by the present system of hot-water pipe heating, and the present cost of fuel is rendering it more and more necessary that the grower should obtain the maximum supply of heat units from his fuel rather than allow so much heat to be dissipated *via* the chimney stack into the clouds.

In the discussion which followed, it was pointed out that the cost of fuel for an acre of glass in the Lea Valley was £350, and as there is a total area of fourteen hundred acres of glass in that district, consuming practically £500,000 worth of fuel, the question of fuel economy is a very important item, and even a saving of £100 a year on a three-acre nursery would be desirable. The engineers, who, of course, could not be expected to fathom the requirements of the growers at a short sitting—in fact, the growers hardly appear to know what they want themselves—made many suggestions, the majority of which were ruled out by the growers. First, it was pointed out that by double-glazing the houses, leaving a space of three-sixteenths of an inch of air space between the two layers of glass, a reduction of fifty per cent. in the fuel bill could be saved. Heating by oil, central heating, the use of electric fans to distribute the air | and prevent stagnant places, and other items were raised in the discussion, most of which the growers seemed to think were impracticable. It was suggested—and the suggestion appears to be a very good one—that as research is evidently needed to solve the problems, there should be direct co-operation between the growers and the Institute of Engineers. Money would be required if carefully-conducted experiments are to be carried out, and this should be forthcoming from the growers themselves, who evidently realise that their present systems are too costly, and coal and coke are annually increasing in price. The commercial grower usually makes a start in business with a small capital, and gradually increases his acreage under glass. In so doing he sooner or later finds himself faced with a battery of boilers, every one of which shows a percentage of waste in fuel consumption. If there is so much to be gained, two per cent. of the capital expenditure on fuel alone—which represents £10,000—should be a sufficient sum for research to be conducted and a research engineer, even if his knowledge of growing is nil, after spending a few months in constant touch with the grower, should be able to grasp the main difficulties which the nurseryman has to contend with in the economical cultivation of his crops.

NURSERY NOTES.

MR. H. J. JONES, LEWISHAM.

The Dahlia and the Michaelmas Daisy take high place among late-flowering subjects for the garden, and Mr. H. J. Jones, has, as is well known, done much to popularise these plants. His exhibits of these flowers in London and elsewhere have always drawn the admiration of visitors, and Mr. H. J. Jones, the founder of the firm, generally superintends the arrangement of the displays. He possesses the artistic sense and attempts what many exhibitors rarely have the courage to do. He not only makes his groups pleasing in so far as the general arrangement is concerned, but often combines two or three varieties in one vase or epergne and blends attractive foliage with the flowers. Whether it be a group of Phloxes, Michaelmas Daisies, Chrysanthemums, Delphiniums, or Hydrangeas, the groups shown by Mr. H. J. Jones are always stamped with the hall mark of originality and usually win the highest awards.

The nurseries where the huge collections of Phloxes, Dahlias, Michaelmas Daisies, and Delphiniums are grown, are situated in the grounds of a charming, old estate at South End, two or three miles distant from the Ryecroft Nurseries and some seven or eight acres are devoted to these flowers. It was, however, the Michaelmas Daisies and Dahlias we especially went to see, and we doubt whether such collections are to be found anywhere else. The number of Dahlia plants alone exceeded ten thousand, and at the time of our visit in early October, they made a wonderful display of colour. All sections were represented, and the Cactus varieties occupied a border by themselves. This arrangement is a wise one for the visitor on the look out for Dahlias suitable for decoration can dismiss the bulk of these in short time. The Cactus border illustrated in a marked degree the undesirability of this section, as a whole, for garden display. True, there are a few which carry their flowers well and are not so rampant in growth as to hide the flowers. Coronation, for instance, is very free-flowering variety of medium size and bright colour, while Masterpiece, lilac, and Marvellous, rose-purple, are two varieties which attracted Mr. Jones's attention in Holland as being good garden decorative sorts. Red King is another variety which is very attractive.

As a contrast, the single Mignonne varieties were employed in one line along the entire length of the border. It was perhaps because of this close proximity that the dismal show of the Cactus varieties was further pronounced, for they are, as it were, pigmies compared to giants, and produce their flowers in abundance, set well above the foliage. Two varieties only need be mentioned—H. J. Jones, a fine clear yellow, and the popular Coltness Gem, rich scarlet; both used either alone or in combination are ideal bedding plants.

The miniature Paeony-flowered section is rapidly coming to the fore, as it is a type which lends itself for bedding and for bold displays in the border. Moreover, the plants are of neat habit and very free-flowering, while for indoor decoration they are sufficiently dainty to be used for dining table or sideboard decoration. Dazzle, bright vermilion; Our Annie, pink with yellow centre; Picture, apricot-pink; Fusée, of a colour resembling the Madame Herriot Rose, and Norah Bell, deep cerise-rose with amber centre, are a few varieties which appealed to us in Mr. Jones's collection.

The Decorative section at one time was in the same plight as the Cactus varieties, but happily raisers have considerably improved the habit of this type, and in so doing have introduced varieties with stiff stems and blooms of good form. Mr. H. J. Jones possesses a very extensive selection of large-flowered sorts and a few of the best were Glory of Aalsmeer, a very imposing white variety with a good stem and an improvement on Princess Juliana; Artis, very free-flowering, of a bright shade of orange-terra-cotta; Murillo, one of the finest of the pink varieties, with blooms of regular shape carried on long, erect stems, and Pathos, a very striking shade of violet-blue. Yellow Perfection is an admirable yellow variety, whilst Dempsey, wine colour; Boekanhage, soft rose; Mevrouw Ballego, crimson, are others worthy of inclusion in the most select list.

Mention may also be made of the Pompon varieties, for these are admirable for floral work and the flowers last a long time when cut. Exceedingly pretty varieties in this section were Effect, scarlet; George Ireland, rich lilac; Ideal, yellow; Galatea, dark maroon, and Jeweltee, a charming flower, very like a miniature decorative in form and possessing silver-pink flowers.

Michaelmas Daisies, too, were represented by a comprehensive collection, many of the varieties having originated in these nurseries. To name a few of the best is by no means an arduous task, for one of the advantages of seeing a collection in flower is that no matter how complete it may be the finest colours and best types are readily noted. These, to our mind, included Rudolph Goethe, lavender-blue; Emma Bedeau, violet-blue; Beauty of Ronsdorf, lilac-pink; and Beauté Parfaite, of the Amellus section and all possessing large-sized flowers. Of vimineus and ericoides varieties there were Lovely, Amy and Star Shower, while of the Novi-Belgii group, a choice half-dozen were Eclipse, similar to the well-known variety Climax in habit, with porcelain blue flowers; Rosea, one of the reddest of rose-lilac shades; Snowdrift, a good double-white flower; Queen of Colwall, tall, with double pale-mauve flowers; Little Boy Blue, dwarf and of neat habit; and Glorious, a pretty pink variety.

Our visit to the Ryecroft Nurseries was a very short one, but we had time to observe that it is here that Mr. H. J. Jones grows his large collections of Chrysanthemums, Fuchsias, Pelargoniums, and Hydrangeas, for which the firm is held in very high repute.

The Hydrangeas were in process of being ripened off out of doors previous to being given protection in frames. The plants were in admirable health, and Mr. Jones' collection at the Chelsea show this year is recalled as being one of the most complete that has ever been staged in this country. It is difficult to explain why so easily a cultivated subject as the Hydrangea is not more often grown, for given very ordinary treatment good trusses of blooms are easily obtainable provided that feeding is resorted to directly the flower buds appear. Water in plenty is also a requirement when the plants are fully established in their pots. Where blue flowers are needed particular treatment is necessary, and Mr. Jones uses a special blueing powder—an article which may be procured from him—to obtain this desirable colour in the flowers.

Mr. Jones lists about fifty varieties of Hydrangeas, some of the newest introductions being Madame Foucard, bright red; Yvonne Cayeux, dark pink; Neige Orleanaise, claimed to be the best whites in existence; and Beauté Vendemoise, white with a slight shading of carmine.

MARKET FRUIT GARDEN.

The hope of a spell of Indian summer during October was not realised. There was, it is true, about a week of fine weather during the month, but, as it was preceded and followed by heavy rain, very little could be done in the way of cleaning the land. Rain fell on sixteen days at my place, the total rainfall for the month amounting to no less than 5·27 inches. All hope of autumn cleaning by surface cultivation must now be abandoned; and a good deal of ploughing and digging during the winter becomes inevitable. Fruit trees, especially Apples, remained remarkably green up to the end of the month. Normally it is considered a good sign if the trees hold their leaves well into the autumn; but this year there is reason to fear it indicates that the wood has not ripened well.

Marketing Finished.

The marketing of Apples was pushed on rapidly during October, and all the fruit sent away before the end of the month. I am glad that this policy was adopted, as prices have since fallen, the drop being about two shillings a bushel in the case of cooking Apples. The arrival of heavy consignments of American and colonial fruit, which seems to begin earlier every year, was the reason given in all market reports.

The past season's experience proves that it is futile to expect, in a season of scarcity, prices high enough to compensate for a light crop. Owing to the prevalence of scab and the general poor quality of Apples, the marketable crop has been even lighter than crop reports indicate. The scarcity of dessert Apples of good quality was indicated by the number of entries at the recent Imperial Fruit Show. The Kent and Southern Counties section, in which my place is situated, was the most unfortunate. There was only one entry of Cox's Orange Pippin in boxes, and none at all in half-bushels. Blenheim Pippin attracted no entries, and there was only one of Worcester Pearmain.

Strong Growth of Trees.

Fruit trees have made a lot of growth during the year; and growers will have to decide how to treat the new wood when it comes to winter pruning. Personally I intend to reduce pruning to a minimum in the case of all trees of bearing age. They will, in fact, be simply thinned out where growth is interfering or crowded. To cut the strong new shoots hard would, I consider, be a mistake, leading to a lot of renewed growth next year. If they are left without shortening, where possible, they will probably form natural spurs along the greater part of their length next season, and these might bear fruit in the following year.

I do not believe in a rule-of-thumb method of pruning followed year after year. Fruit trees seem to be most fruitful when they are making a quite moderate amount of growth; and we ought to prune and manure them in such a way as to maintain that condition. This means modifying the treatment as suggested by the state of the trees in any particular season.

East Malling Stocks.

A good many nurserymen are now offering Apples on the types of Paradise stock standardised at the East Malling Research Station. It is much to their credit that they have shown themselves ready to adopt these standards. The advantage to growers is obvious. They can now rely upon getting trees of uniform vigour. In the past every gardener has had experience of trees which did not do what was expected of them. Some specimens remained obstinately dwarf, whilst others, which were intended to fill a confined space, insisted on romping away and refusing to fruit for many years, or until artificially checked by root-pruning or transplanting. The fault lay in the fact that, although the trees were on so-called Paradise, there are several types of Paradise, varying in vigour from the most dwarfing to types almost strong enough to use for producing standards. The types selected at East Malling, and now being adopted by nurserymen, may all be raised vegetatively from stool beds, and can therefore be depended upon not to vary in vigour.

For moderate-sized bushes, either in gardens or for commercial plantations, Malling Type II will give satisfaction in most conditions. This is the well-known Doucin, which has long been used by many nurserymen, though not always under that name. Some of the very prolific varieties, like Stirling Castle and Lane's Prince Albert, would be better on Type I, which is the true River's Broad-leaved English Paradise. This is suitable also where large permanent bushes are required. It is even strong enough for half-standards. Type IX, Jaune de Metz Paradise, is very dwarfing, but will prove useful for special purposes. It is valuable for cordons, and for quite dwarf bushes that may be planted ten feet apart. Even if the trees are pruned hard, they will generally bear fruit in the second or third year after planting, and will continue to bear heavy crops of large fruit. The value of this stock for commercial orchard "fillers," planted temporarily amongst permanent trees, will be obvious. Very vigorous stocks, suitable for standards, have been picked out from amongst the so-called Paradise stocks at East Malling, and the Crab and seedling stocks at Long Ashton. Further trial will be needed, however, before trees on these stocks are placed on the market. As only types that can be raised vegetatively are being retained, it is to be hoped that in time seedling stocks, with their essential variations, will disappear altogether,

Surface Drainage.

Much harm is done when the roots of fruit trees lie in water-logged soil during the winter. Drains should be inspected at this season to make sure that they are in order and that the outlets are not blocked. Any drain that is not running after all the rain we have had must be blocked somewhere, and should be opened until the trouble is traced.

Additional drainage may be supplied by drawing open water-furrows midway between the rows of trees or bushes, using a ridging plough. Provided that the land is sloping, valuable surface drainage is thus secured, and the land certainly lies drier during the winter. At the foot of the slope the furrows should open into a cross furrow, from which the water can be led away across the headland at intervals. Even if there is no fall, the surface water collects in the furrows and is drawn away from the trees.

Fruit Land.

It is a moot point whether any one who intends to grow fruit commercially should make the proximity of a good market his chief consideration when choosing a site, or whether he should insist on thoroughly good fruit soil irrespective of its distance from a market. I am inclined to think that the latter is the wiser course. It is possible to grow fruit on any land which produces the usual farm crops with fair success; but the trees will never flourish as they do on the best fruit land to be found in certain favoured districts. The land is cheaper in the first instance, of course, but much greater expenditure is necessary in after years on manures and probably on spraying to cope with fungus diseases. The public demands fruit of high quality nowadays, and this is produced much more easily in some districts than in others.

These remarks were suggested to me on the receipt of a thousand two-year-old Black Currant bushes from a fruit farm on the old red sandstone soil in Herefordshire. Although the variety is Baldwin, which is not a strong grower, these bushes are the largest I have ever seen. Most of them have from five to seven stout, clean shoots about three feet long. It must be an easy matter to produce heavy crops of Black Currants on land that grows such bushes.

Dessert Apples.

Of the Apples discussed at the Royal Horticultural Society's meeting (p. 288), probably Charles Ross and Rival are most worthy of the attention of market growers. I am glad to see that these two varieties were given a good report. I have tried both, and planted them more extensively in recent years because of the favourable impression gained from the older trees. Both have stood out in this year of light crops and much scab on account of their comparatively good yield and clean fruit. They are evidently resistent to scab to a marked degree, a quality which is worth a great deal. It is commonly said that Charles Ross is too big for dessert. This may be so, but for all that it is one of the best selling Apples we have. I am always asked for it by salesmen. Certainly the second-sized fruit realised a little more than the very largest this year; but I have not known this to happen before. I made four grades, and all sold well. The finest specimens are excellent for packing in single-layer trays (Peach boxes). The tree is usually small when it comes from the nursery, and hangs fire for a year or so; but after that it grows vigorously and makes a fine, shapely tree.

Rival, also raised by Mr. Charles Ross, and I believe from the same parents (Cox's Orange Pippin and Peasgood's Nonesuch), I have not had so long; but I believe it will prove the more valuable of the two. It is of more moderate size and rather better flavour. The appearance is not quite so brilliant, but it does acquire a fine carmine flush even in a dull season; and the variety is liked on the market, which is the main point. I think it is the most promising variety we have to follow Worcester Pearmain. The tree is a vigorous and shapely grower, and yet it begins to fruit at an early age. *Market Grower.*

THE TRAINING OF WALL FRUIT TREES AND VINES.

Skilfully trained wall fruit trees are indications of a well-managed garden and add considerably to its appearance. It has, however, been recently remarked that this operation is not now so generally well done as it formerly was. If this is the case—a statement I am not in a position to substantiate—it may be attributed to the want of time to attend to it rather than the lack of skill of the operators. Those of us who have been associated with gardening for upwards of sixty years or so, know that glasshouses were not so plentiful in our early days as they are at the present time, and that there was more time to devote to details in the culture of hardy fruits.

I well recollect—early impressions are lasting—when I became an apprentice in the gardens of Crimonmogate, Aberdeenshire, what a pride the gardener, Mr. Jas. Esson, who had been trained at Haddo House Gardens, took in the training of fruit trees and vines, and what good Apples were grown by him on horizontal and fan-trained trees on south, and other walls, though they were inferior on bush or standard trees.

The vines were trained in a manner I have not observed elsewhere, and though I cannot advocate its adoption, really good Grapes were produced, and amongst others, room was found for Grizzly Frontignan, a highly flavoured, small-berried variety not often met with, though on account of its rich flavour, well deserving of general cultivation. The vineries were span-roofed, and the vines were trained closely together on either side of the rafters; no spurs were left on the rafter sides, but other vines of some five feet in height were planted beneath the centre of each light, on either side of the central pathway. These were spur-pruned in the ordinary manner, and though not placed in favourable positions, they produced good crops of fruit of better quality than might be expected.

Late Grapes were not kept by placing the stalks in bottles, but the bunches when gathered were placed between two framed sheets of perforated zinc and arranged over warm-water pipes and thus dried, in fact, turned into Raisins, in which condition they made an addition to dessert fruits.

What, however, impressed me most in those early days of my gardening career, were the splendidly trained Apricots at Pitfour House, an adjoining estate. These were fan-trained, the branches radiating at equal distances with ample space for spurs and young shoots to be laid in between them. The new shoots were arranged upon the upper sides of the branches, affording a pleasing effect, but that they yielded better crops of fruit than if laid in on either side, as I understood Mr. Smith considered was the case, is doubtful. I have since heard that these fine trees were removed in order to afford room for glass structures. *Thos. Coomber, V.M.H., Broadstairs.*

FRUIT REGISTER.

LATEST KEEPING DESSERT APPLES.

Heusgen's Golden Reinette is one of the best late Apples in cultivation, the fruits keeping sound until April. This Apple is russety, with bright red on the sunny side. The flesh is yellow and crisp. Every garden should contain this variety. Fearn's Pippin is a small, golden-yellow fruit, with a bright red flush. The flesh is firm and remains crisp until very late in the season.

Duke of Devonshire is another late dessert Apple of merit, keeping until May. The tree is hardy and fertile. The fruit is small, round in shape and coloured yellow with russet markings. The flesh is crisp and finely flavoured. This is a fine variety, possessing every essential as one of the choicest of late dessert varieties. D'Arcy Spice or Baddow Pippin is a variety worthy of extended cultivation and should be kept on the tree so long as possible to prevent shrivelling when stored. The flesh is firm and highly scented. The fruit is of medium size and coloured dull yellow, marked with brown russet. Mulchings of old spent manure will greatly assist the fertility of this variety.

Belle de Boskoop is a useful sort and recommended for dual purposes. The fruit is large, roundish-oval, and coloured golden russet with a red cheek. The flesh is firm and somewhat akin to Blenheim Pippin in flavour. The tree is a clean grower and an excellent cropper.

Lord Hindlip is a most useful sort, combining all the good qualities of a late keeping Apple. The fruit is of medium size, conical in shape, the skin red flushed with russet. The flesh is firm and highly flavoured.

Fruits of this Apple properly stored will keep sound until the end of May.

Norman's Pippin is a late keeping fertile sort, the growth being compact and healthy. The fruit is conical, grey green in colour, with russet markings. The flesh is mellow and of good flavour. This is a hardy Apple and the fruits will keep until April.

Sanspareil is a round, medium-sized fruit, useful for dessert and culinary purposes and keeps sound until June. The markings of the fruit are very pretty, these being yellow and red stripes. It is an Apple of merit and worthy of extended cultivation. *Pomona.*

HOME CORRESPONDENCE.

Carnation Winsome Wharton. — In your description of this new variety (p. 290) you state incorrectly that it is a medium-sized perpetual Malmaison. This Carnation is of the true perpetual-flowering type, and has not the habit or the form of a Malmaison. It is most easily grown and the most prolific flowering Carnation raised. *J. R. Batty, Skelton Castle Gardens, York.*

Royal Horticultural Society's Fruit Show.—The remarkable increase in the number of collections of fruit staged in the competitive section at the recent Royal Horticultural Society's Fruit Show was doubtless a direct result of offering much more generous prizes than hitherto, and must have been very gratifying to those responsible for the schedule, as it certainly was to those who take a keen interest in this annual event. This being so, it is all the more to be regretted that the single dish classes showed such a falling off, both of numbers and quality, as compared with former shows. This result was largely due to the new rule restricting the number of entries from any one garden to six in each section. The motive for making this new regulation was doubtless to encourage the smaller growers and amateurs to compete in greater numbers, and, if it produced this result few would question its wisdom, and certainly not the older exhibitors, of whom the writer may claim to be one. But, unfortunately, it did not have this effect, indeed, it reduced the number of dishes, which is surely quite contrary to the wishes of those who framed the rule. A quotation from your excellent report of the show in question will illustrate my meaning:—"Neither Norfolk Beauty, Crawley Beauty, nor Golden Noble were represented." In many other of the single dish classes the entries consisted of only one, two, or three dishes, especially in the classes for the less popular varieties. This was due to the fact that the larger exhibitors made their six entries in the classes comprising the most popular varieties—which are, incidentally, the very classes in which the smaller growers would be most likely to compete—leaving the less popular varieties, which it is the aim of the society to popularise, either unrepresented, or else so poorly shown as most effectively to discourage anyone from growing them. This restriction, although excellent in its objects, has, in effect, decreased the interest and educational value of the division affected by it, while at the same time it has done little or nothing to encourage new exhibitors to stage their produce. It is very difficult to know just how best to effect this latter object, but an idea I should like to see tried is to provide a section for single dishes of the more popular varieties which would be open only to those who have never previously won a prize at this show. Success in such a section would no doubt bring the growers into the open classes and thus increase the extent and interest of this show. *T. E. Tomalin.*

Verbena venosa.—With reference to Verbena venosa (pp. 245, 267, 279, 306), I well recollect how this species succeeded at Pencarrow as a perfectly hardy plant, where Mr. Jones so pleasingly associated it with yellow Calceolarias in the flower gardens. In no other garden, except in Cornwall, have I known it to be treated as a hardy subject. In fact I have not seen it used in any other county as a bedding plant. It is, however, pleasing to read (page 306) that it will withstand the winter in our eastern counties, with slight protection. *T. Coomber.*

Snowdrops from Seeds.—In the spring of this year I entered into a rather long discussion, in these pages, on the propagation, in their wild state, of Snowdrops from seeds. I forwarded some seed capsules to Professor William Wright Smith, of the Royal Botanic Garden, Edinburgh, and have recently received from him the following letter, which, I think, is worthy of publication:—"I have just had from Mr. Stewart the result of his experiments on the fruits of Snowdrop which you sent me on June 17 this year. The fruits were placed on a light, dry shelf, until they were thoroughly ripened—for a period of about ten days. On removing the seeds from the fruits after drying it was found that comparatively few seeds seemed likely to germinate, as one or two seeds in each fruit had drawn into themselves all the food material available. These few apparently good seeds were sown and they are now germinating. The seeds which were removed and sown immediately on their arrival here all went bad and did nothing. So at any rate some of the seeds produced by your plants have germinating powers." *Formakin.*

Young Gardeners of To-Day. It is often said by gardeners of the older generation that the young gardener of to-day has not an adequate knowledge of vegetable-growing, and to some extent this appears to be true, but I do not think the young gardener is altogether to blame for it. The average training for one who has taken up horticulture as a profession consists of several years spent under glass, first as crock boy, then improver, journeyman, and so on, and if he has been fortunate in obtaining his situations in large gardens where gardening under glass is carried on extensively, he has but little time to study the cultivation of vegetables and hardy fruit. It is true that some young men contrive to spend a few years in the kitchen garden and pleasure grounds, as well as under glass, but very many do not, and perhaps it is not to be wondered at, considering the most important post next to that of head gardener is inside foreman (general foremen are not so much in demand). But the trouble begins when the young man takes his first place as head; perhaps he finds himself with a staff of two or three men, and very little glass, while the kitchen garden is the important feature. There are scores of young gardeners who are very keen about their work in the glasshouses, but they are "at sea" in the kitchen garden. Over-enthusiasm for one branch should be guarded against by those intending to follow gardening, in its general sense, as a profession. Those who are able to specialise in one particular thing, and can keep at it all their days, are lucky, yet they are few among the large army of gardeners. An old garden witticism says "an Englishman makes a good plantsman, but it takes a Scotsman to grow vegetables well." Has this derived from the fact that the Englishman spends too many of his student days under glass? It sounds very like it, but I have had no experience in Scottish gardens and so am not in a position to even suggest how the statement originated. The importance of the kitchen garden cannot be too strongly instilled into the minds of young men during the first few years of their career, and instead of allowing them to think, as they often do, that to grow vegetables does not require very much skill, they should be made to see that learning and experience are as necessary for vegetable cultivation as for the tender indoor plants. *H. W. Stenning.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

November 6 and 7.—The annual show of this long-established Society was held on the above dates in the Royal Horticultural Hall, Vincent Square, Westminster, and although the number of competitive exhibits was not so large as last year, the quality, considering the season with which growers have had to contend, was, nevertheless, very good. Japanese Chrysanthemums were of a very high standard, and some exhibits of single varieties were excellent.

During the afternoon and until closing time on each day there was a huge throng of visitors, and so great was the crowd that reporting, at times, was well-nigh impossible. The Australian veteran grower and raiser, Mr. T. W. Pockett, attended the show, and he was welcomed by the numerous growers, who kept him in constant conversation throughout the opening day.

First-Class Certificates.

The Floral Committee met in the morning of Nov. 6 and awarded First-Class Certificates to the following varieties :—

Thomas W. Pockett.—A very fine large Japanese variety of great substance. The colour is delicate rose-pink with a silvery-reverse.

Mr. T. Slack.—The quality of this Japanese variety is excellent; it is of striking maroon-crimson colour with buff reverse.

Nan Luxford.—A charming pink Japanese variety, with the reverse side of the petals of a lighter shade of colour. A very solid flower. This and the above two varieties were shown by Messrs. Keith Luxford and Co., Harlow.

Stirling Stent.—The colour of this Japanese variety is lilac-pink, set off with the silver tone of the reverse side of the florets.

Mr. W. Petty.—Another Japanese variety of a pretty combination of rose, Apricot and mauve, with a yellow reverse to the well-formed florets. This and the above variety were shown by Mr. Baxter, Lockley Hall Gardens, Romsey.

J. Symonds.—A bright yellow Japanese variety of good depth and form. Shown by Mr. G. Carpenter, West Hall Gardens, Byfleet.

Harmony.—A decorative flower of bright, orange-red colour, and very attractive for market.

Ennismore.—A mammoth decorative bloom, measuring six inches across. The colour is crimson-orange, with buff reverse.

Sunburst.—The colour of this decorative flower is salmon-buff, and is very pleasing when seen under artificial light. This and the above two varieties were shown by Mr. H. Shoesmith, Guildford.

Annette.—A beautiful single flower of yellow-ground colour, the broad florets being flushed with orange-scarlet. Shown by Messrs. Cragg, Harrison and Cragg, Heston.

Hon. Edith Smith.- A very bright and large, single variety of rose-pink colour. Shown by Mr. W. Turnham, Greenlands Gardens, Henley.

Commendation.

Sparkler. — A beautiful single variety of excellent form and substance, but rather smaller than most exhibition sorts. The colour is rich, bright crimson. Shown by Mr. J. Barrell, Bridgewater.

Open Classes (Trade Excluded).

The principal open class in amateur section—the William Wells Memorial Class—was for thirty-six Japanese blooms, in twelve varieties, three blooms of each, and of the three competitors The Lord Wandsworth Agricultural College (gr. Mr. E. H. Pearce), Long Sutton, Basingstoke, was placed first with a highly creditable selection of well-finished blooms. The varieties employed were Mrs. R. C. Pulling, yellow and exceedingly fine; Mrs. G. Drabble, white; Mrs. George Monro, crimson; Mrs. Algernon Davis, lilac; A. F. Tofield, chestnut-red with buff reverse; Majestic, orange-buff; Shirley Golden, yellow; Duchess of Westminster, rose-lilac; Mrs. Peter Murray, rose-purple; Queen Mary, white; W. Rigby, yellow; and Princess Mary, yellow. Capt. R. B. Brassey (gr. Mr J. G. Quinn), Cottesbrook Hall, Northampton, followed a good second, and his best blooms were of Norman Chittenden, white; Mrs. George Monro, James Stredwick, old rose; Mrs. R. C. Pulling, Mrs. Algernon Davis, and Majestic. Viscount Hambledon (gr. Mr. W. Turnham), Greenlands, Henley-on-Thames, was third, with fine blooms of Louisa Pockett, white; Wm. Rigby, and Mrs. Geo. Monro.

In a similar class for twenty-four distinct varieties The Lord Wandsworth Agricultural College was placed first out of three competitors. Again the quality of the flowers was of a very high standard, and the best of the winning varieties were Ryecroft Triumph, crimson with buff reverse; Dawn of Day, Mr. Keith Luxford, white, tinged green; A. F. Tofield, chestnut-red; Mrs. Algernon Davis, Queen Mary, Mrs. Peter Murray, lilac-rose; Victory, white; Majestic, and Mrs. John Balmer, crimson and buff. E. G. Mocatta, Esq., followed a close second with perfect flowers of Mrs. Brunton, Princess Mary, Mrs. G. Drabble, and Mrs. Algernon Davis; and the third prize was gained by The Dowager Lady Annally (gr. Mr. D. Cameron), Holdenby Hall, Northampton.

Of the four exhibitors in the class for twelve Japanese blooms, distinct, F. C. Stoop, Esq. (gr. Mr. G. Carpenter), West Hall, Byfleet, secured the first prize, and amongst his selection were well-finished blooms of Louisa Pockett, Peter Murray, Dawn of Day, J. Symonds, yellow; Mrs. C. Edwards, white; Majestic, General Petain, pink; and General Allenby, deep yellow. The Dowager Lady Annally was second, and The Lord Wandsworth Agricultural College and Mrs. Lamb (gr. Mr. E. Evans), Marlow, were placed third and fourth respectively.

In the class for eighteen Japanese blooms in six varieties of different colours, three blooms of each, The Dowager Lady Annally was the only competitor, and was awarded the first prize. The quality was very good, and the varieties shown were Mrs. G. Monro, Majestic, Princess Mary, Duchess of Westminster, Queen Mary, and Major Wheatley, yellow flushed with rose.

The Holmes Memorial Challenge Cup, for thirty-six distinct Japanese blooms attracted two competitors, and the first prize was gained by E. G. Mocatta, Esq. (gr. Mr. W, Holden), Woburn Place, Addlestone. His blooms were of very good quality and contained many of the newest varieties. The following were some of the varieties shown: Peace, yellow; Mrs. W. Hitchin, maroon; Mrs. Brunton, a fine white; Mrs. J. Gibson, pink; General Allenby, yellow; Mrs. G. Monro, J. Balmer, crimson-scarlet; Mrs. M. Sargent, greeny-white; Mrs. Holden, rose and silver reverse; Lady Talbot, yellow; Mrs. B. Carpenter, lilac; Queen Mary, Dawn of Day, orange; Enchantress, rose-lilac; H. V. West, yellow; Duchess of York, rose-purple; and General Petain, pink. The other exhibitor, Viscount Hambledon, was second, the varieties Queen Mary, Edith Cavell, chestnut-bronze; J. Stredwick, Mr. J. C. Kelly, Princess Mary, and Mrs. R. C. Pulling, being shown in fine condition. For six Japanese blooms, distinct, chief honours fell to E. G. Mocatta, Esq., his varieties being Majestic, Mrs. Brunton, Princess Mary, General Petain, Mrs. P. Murray, and Mrs. Geo. Monro. The other competitor, Capt. C. O. Liddell (gr. Mr. E. Jones), Chepstow, was second.

Viscount Hambledon was first in the class for one vase of three blooms of a white Japanese variety with magnificent blooms of Louisa Pockett, and the same variety was shown by Sir Jeremiah Colman (gr. Mr. J. Collier), Gatton Park, Reigate, which gained for him the second place. Competition was much keener in a similar class for a yellow variety, and Viscount Hambledon led with perfect blooms of Mrs. R. C. Pulling; Mrs. Guthrie (gr. Mr. P. Burr), East Haddon Hall, Northampton, was second with the same variety; and Capt. R. B. Brassey was third with Rose Mary Simmonds.

F. C. Stoop, Esq., excelled for one vase of a variety of a colour other than yellow and white and staged high quality flowers of Majestic, which variety was also shown by the second and third prize exhibitors, The Lord Wandsworth Agricultural College and the Dowager Lady Annally respectively. For one vase of six incurved blooms, not fewer than three varieties, Mrs. Lamb was the first prize-winner and showed Clara Wells, rich cream; Charles H. Curtis, deep yellow; and Embléme Poitevene, light yellow, in good form.

The classes devoted to collections of incurved varieties were poorly contested, and the principal class, which carries with it The Holmes Memorial Challenge Cup, attracted no entries. Mr. R. C. Jolliffe, Lyndhurst, was the only competitor in the classes for twelve distinct and six distinct incurved blooms and was awarded second prize in each class.

F. C. Stoop, Esq., was an easy first in the class for six vases of decorative varieties and showed Brilliant, crimson-red; Golden Marvel, orange-yellow; Mrs. E. Reeves, golden-yellow; Blanche du Poitou, white; Mr. P. Matcham, yellow-flushed rose; and G. Carpenter, yellow. J. C. Jay, Esq. (gr. Mr. Mr. T. B. Osman), Barnet, and G. W. Fisher Esq. (gr. Mr. T. Finch), Purley, were placed second and third respectively. For six vases of Pompon varieties, Mr. J. W. Hussey, Matford Lodge, Exeter, was the first prize winner with well-grown flowers of Prince of Orange, William Westlake, yellow; Delilah, lilac-rose; and Wm. Sabey, canary-yellow. The other exhibitor, Mr. G. W. Fisher, was second. Mr. J. H. Hussey was the only exhibitor for six vases of Pompons (not disbudded) and was awarded the first prize.

Competition was very keen in the classes devoted to single-flowered varieties, and of the five exhibitors in the class for nine vases, distinct, F. J. Yarrow, Esq. (gr. Mr. J. Robertson), St. John's Wood, secured the premier award with magnificent specimens of Molly Godfrey, lilac-pink; Kitchener, crimson-scarlet; Sandown Radiance, chestnut-scarlet; Audrey, yellow; Crimson Velvet, crimson; Mrs. F. J. Yarrow, Indian-red; Mrs. W. Smith, white; Mrs. A. Robertson, yellow; and Esme Waters, yellow. F. C. Stoop, Esq. was second with good blooms of Mrs. J. Palmer, white; Pink Beauty, and Constance, light yellow. The third prize was gained by W. Maclachlan, Esq. (gr. Mr. W. J. Taylor), Pinner.

The last-named exhibitor excelled in the class for six vases of large-flowered singles, and displayed Sandown Radiance, Molly Godfrey, Esme Walters, aud Coronet, deep yellow, in fine form. F. C. Stoop, Esq., and the Dowager Lady Annally were placed second and third respectively. For one vase of small-flowered singles, F. J. Yarrow, Esq., Miss N. Hedges, Sydenham, and J. C. Jay, Esq., were placed in the order mentioned.

Open Class (Trade Included).

The principal class in this section was for twelve vases of large-single varieties, distinct, and the first prize, The George Monro Challenge Cup, and a cash prize of £2, was won by F. J. Yarrow, Esq., who staged a fine selection, including Kitchener, Isabel Felton, pale yellow; Mrs. A. Robertson, Margaret, Apricot-red; Reginald Godfrey, bronze-red; Audrey, yellow; Mrs. J. Palmer, white and crimson velvet. Viscount

HAMBLEDON was second with choice flowers of Robert Collins, orange yellow; Molly Godfrey, Mensa, Susan, pink on buff ground; and Phyllis Cooper, yellow; and Mr. H. WOOLMAN, Shirley Nurseries, Shirley, Birmingham, was placed third. There were five competitors in this class.

Mr. J. C. JAY was first for six vases of Anemone-single varieties, followed by Mrs. GUTHRIE, second, and Mr. H. RUNCIEMAN, third. The last-named competitor gained first prize in the class for six vases of singles and showed W. J. Godfrey, Edith Dimond, Stewart Smith and Molly Godfrey, in fine style. Second, F. C. STOOP, Esq., and third, Mrs. GUTHRIE.

The varieties W. J. Godfrey, Margaret and Susan, gained the first prize for Capt. R. B. BRASSEY in the class for three varieties of large-flowered singles and he was followed by Mr. J. C. JAY and Mr. W. MACLACHLAN.

FLORAL DECORATIONS.

The decorative exhibits were below the average as usually seen at this show, the prizes generally being poorly contested. In the open classes, Mr. F. J. YARROW had a very bold and effective vase of single Chrysanthemums in a wide range of colours, which secured for him the first prize, and he was also the most successful competitor in the class for vases of large exhibition Japanese varieties, in which case he employed magnificent blooms of Mrs. R. C. Pulling, mixed with scarlet Oak and Berberis foliage and Ferns. Miss N. HEDGES was second, and this exhibitor scored in the classes for a vase of large incurved blooms and a basket of Chrysanthemums arranged with any foliage for effect.

In the amateur section G. RICHARDSON, Esq. (gr. Mr. J. Vanstone), Tulse Hill, was first in the class for an arrangement of Chrysanthemum blooms, suitable for a hall, hall-table, or sideboard decoration in a space occupying four feet by three feet, and he was also first for a large vase of a Japanese variety arranged with foliage as well as for a bowl of single Chrysanthemums. Other first-prize winners were W. LUSTY, Esq. (gr. Mr. C. Hazelgrove), Ashtead, for a decorative vase of five blooms of a Japanese variety; Mr. E. R. CRICK, Green Lanes, N. 4, for a vase of singles, and Mr. C. E. THOMSON, Forest Hill, for a vase of large single blooms.

CUT BLOOMS (AMATEUR SECTION).

In the class for twelve Japanese blooms, distinct, Mr. W. LUSTY was the premier prizewinner and showed highly creditable flowers of Edith Cavell, W. Turner, Majestic, Mrs. R. C. Pulling, General Petain, and Princess Mary. Mr. A. DURRANT, Beckenham, was second, and Mr. R. J. JOLLIFFE, Lyndhurst, third. Mr. W. LUSTY was the only exhibitor in a similar class for six blooms, his best flowers being Louisa Pockett, Mrs. R. C. Pulling, and Sir C. Letchworth, and he received the first prize while he also secured leading place in the three vases of Japanese blooms, distinct, three blooms in a vase. Mr. G. H. FISHER showed the best six vases of single varieties.

In the other section devoted to amateurs Mr. R. J. JOLLIFFE was first in the classes for twelve Japanese blooms and for six incurved blooms; Mr. E. R. CRICK led for six distinct Japanese varieties of Mr. C. Thomson, and Mr. B. CARPENTER secured the highest awards in the classes for three vases of singles and six incurved blooms respectively.

AFFILIATED SOCIETIES CLASS.

There was only one entry in this class and the FINCHLEY CHRYSANTHEMUM SOCIETY (Secretary, Mr. B. Carpenter) secured the Challenge Trophy and first prize, a feat it has accomplished on many occasions. The class demands a representative display of twelve vases of cut Chrysanthemums to be shown in vases, and the blooms exhibited were of excellent quality. Amongst Japanese varieties were Major Wheatley, Wm. Rigby, Mrs. J. Gibson and Mrs. G. Drabble; Romance, yellow, was shown amongst the incurved varieties, and Molly Godfrey, Bronze Molly, and Suzan were three choice single flowers.

TRADE GROUPS.

The trade groups were in themselves a prominent feature of the show and the exhibits were arranged around the sides of the Hall. Mr. H. J. Jones had the same group as was shown the previous Tuesday at the Royal Horticultural Society meeting, when it received a Gold Medal (see p. 325). On this occasion it was awarded a Gold Medal offered by Messrs. Clay and Son for the best non-competitive exhibit in the Show, as well as the Large Gold Medal from the National Chrysanthemum Society. Messrs. Keith Luxford and Co. also had a fine display for which they received a large Gold Medal, and a feature was made of the new lilac-pink variety Thos. W. Pocket, which gained a F.C.C. at the same meeting. Other good flowers were Sulphur Queen, Mrs. B. Carpenter, two fine Japanese varieties, and Nona, Myra, Oriole, Aristocrat, and Chloe amongst the single varieties. Mrs. D. JOY (gr. Mr. F. J. Bright), Bentley, Hants., staged four magnificent specimen plants of the Japanese variety Mrs. R. Luxford, for which he received a small Gold Medal. The plants were growing in fifteen-inch pots, and the cuttings were rooted in December of last year. A system of pinching the plants had produced an abundance of flowering shoots—in fact the average number of blooms on the four plants was between eighty and ninety—all of which carried good flowers.

Messrs. CRAGG, HARRISON AND CRAGG were awarded a Gold Medal for a splendid group rich in decorative varieties, and the principal of these were Aldyth, crimson; Isolde, straw-yellow; Jean Pattison, copper; Felix, chestnut-red, and T. Page, a new pink.

A Silver Medal was awarded to Mr. H. WOOLMAN, who relied mainly on single flowers, the varieties Raleigh, scarlet-crimson, and Mrs. T. Hancock, salmon-Apricot; Hilda Shoebridge, pink, being exceptionally well-shown.

Messrs. W. WELLS AND Co. gained a small Gold Medal for a representative group, and of the many varieties staged, R. Hooper Pearson, Mrs. R. C. Pulling, Duchess of York, Edith Cavell, and Mrs. G. Drabble were prominent among the Japanese section.

Mr. W. YANDELL showed Jean Patterson, Phyllis Cooper, Sorcerer, and H. W. Thorpe in his group of flowers (Silver Medal), and Mr. W. T. HATCH had a bright display, in which Blanche Poitevene, Hortus Toulosanus, Cranfordia, and Rayonnante were a few of the outstanding varieties. (Silver Medal.)

In the group exhibited by Mr. J. E. COLE, Majestic, Mrs. R. Harris, a good, single yellow; and Mrs. C. Fox, a yellow Japanese bloom, together with a number of seedling varieties were included (Silver Medal). Messrs. W. J. GODFREY AND SON staged a neat selection of singles, chief of which were Joy, Doreen, November Glow, and Devonshire Cream. (Silver Medal.)

Mr. F. G. WOOD showed Golden Marvel in quantity (Bronze Medal), and the Swanley Horticultural College for Women had a decorative group of flowering plants (Bronze Medal). Mr. B. PINNEY also secured a Bronze Medal for a small group.

READING AND DISTRICT GARDENERS'.

NOTWITHSTANDING the inclement weather there was a large attendance of members at the fortnightly meeting, held in the Abbey Hall on the 27th ult., presided over by the president, Mr. Frank E. Moring. The lecturer was Mr. E. R. Janes, of Messrs. Sutton and Sons, and his subject was "Melons and Cucumbers in Houses and Frames." The subject was dealt with in a most practical manner, and the lecturer gave valuable information on soils, sowing, treatment of seedlings, and other details.

In the competition for collections of vegetables, Mr. A. W. GOWER, The Gardens, Calcot Grange, secured the first prize in the open class; second, Mr. A. H. FULKER, The Gardens, Elmhurst, Reading. In the class for members not employing more than one assistant, Mr. DAY, Tilehurst, was first followed by Mr. J. HUNT, Calcot. Mr. F. HAINES, Calcot, was the premier prizewinner in the class set aside for single-handed gardeners, and Mr. R. BULLER, Reading, secured the first prize in the allotment holders class.

For three dishes of Pears in season, Mr. M. GODDARD, The Gardens, Bear Wood, won the first prize.

In the non-competitive section, a first class certificate was awarded to Mr. W. CHISLETT, Bill Hall Gardens, for a magnificent collection of Apples and Pears, consisting of forty-seven distinct varieties of the former, and thirteen of the latter, including not only the best of the up-to-date varieties but many of the old sorts. A similar award was also made to Mr. A. W. GOWER for a splendid group of plants of Chrysanthemums. Awards of Merit were made to Mr. E. ILES for excellent Savoy Cabbages, and to Mr. G. GODDARD for a small but meritorious collection of vegetables.

CROYDON CHRYSANTHEMUM.

THE thirty-second exhibition of the Croydon Chrysanthemum Society was held in the Baths Hall on Wednesday, the 29th ult. The exhibition included not only Chrysanthemums, but also fruits and vegetables; the total number of entries was 231. The quality of the exhibits generally was very good.

A challenge cup was offered in the open class for eighteen blooms of Japanese Chrysanthemums and it was won by F. E. RICHARDS, Esq. (gr. Mr. G. Tyler), Coombe Hall, East Grinstead; second, Mrs. BOND (gr. Mr. S. Pead), Croylands, Surbiton. The best exhibit of ten Japanese blooms, distinct, was shown by Mrs. HOWESON (gr. Mr. M. C. Cannon), Manor House, Ditton Hill, Surbiton, who exhibited the premier incurved bloom in the show. Mr. G. TYLER, who was second in this class, showed the premier Japanese bloom.

The best group of pot-grown Chrysanthemums was staged by Mr. F. C. WILLIE, gardener to W. MCALPINE, Esq., Holmesdale, Nutfield. Sir JEREMIAH COLMAN, Bt. (gr. Mr. J. Collier), Gatton Park, Reigate, excelled in the class for three blooms of the variety Mrs. George Monro.

The finest incurved Chrysanthemums in the class for ten varieties were shown by Alderman G. J. ALLEN (gr. Mr. J. Pullen), Coombe Cliffe, Croydon; second, Mr. C. CANNON. For twelve Japanese Chrysanthemums, C. W. EVANS, Esq. (gr. Mr. E. Willis), Batt's Hill, Redhill, was placed first, and Mr. F. E. JONES, Esq. (gr. Mr. W. E. Baigent), Beckenham, second. The best decorative varieties staged in vases were shown by E. D. MORTON, Esq. (gr. Mr. C. H. Fairs), Sanderstead Court, while J. ROWLETT, Esq. (gr. Mr. H. Hammond), Gwynnecott, Sanderstead, was second and this exhibitor had the best two vases of single Chrysanthemums.

In the local classes prominent prize winners were Mr. A. H. PULLIN, Mr. H. EAST, Mr. R. GLADWELL, Mr. G. EDWARDS, Mr. H. E. MARDEN, Mr. J. SYMONDS, and Mr. L. GOOCH.

SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.

The Autumn Exhibition of the French National Horticultural Society was held this year, as noted in our issue of November 1 (p. 293), at the Porte Maillot, on the fortifications of Paris, in a temporarily-adapted building pompously named the "Palais de Bois." The usual *venue* at Cours-la-Reine was not available owing to the work being done there in preparation for the forthcoming Exhibition of Decorative Arts. Thanks to the skill shown by the organising committee, the very best was made of the poor accommodation available, and the exhibition was as beautiful as usual, fruits in particular being especially fine, and shown in great quantity.

The "Grand Prix d'Honneur," given by the President of the Republic, was awarded to the Maison Férard (MM. Fortin et Laumonnier) for a very fine group of Chrysanthemums (singles and pompons), of which the singles Souvenir de Pierre Val, yellow ; Val d'Enfer, pink ; Le Garonnais, white ; and Mésange, of curious colouring, including chamois ; and pompons Golden Climach, canary-yellow, and Perle Vivante, pink, were noted.

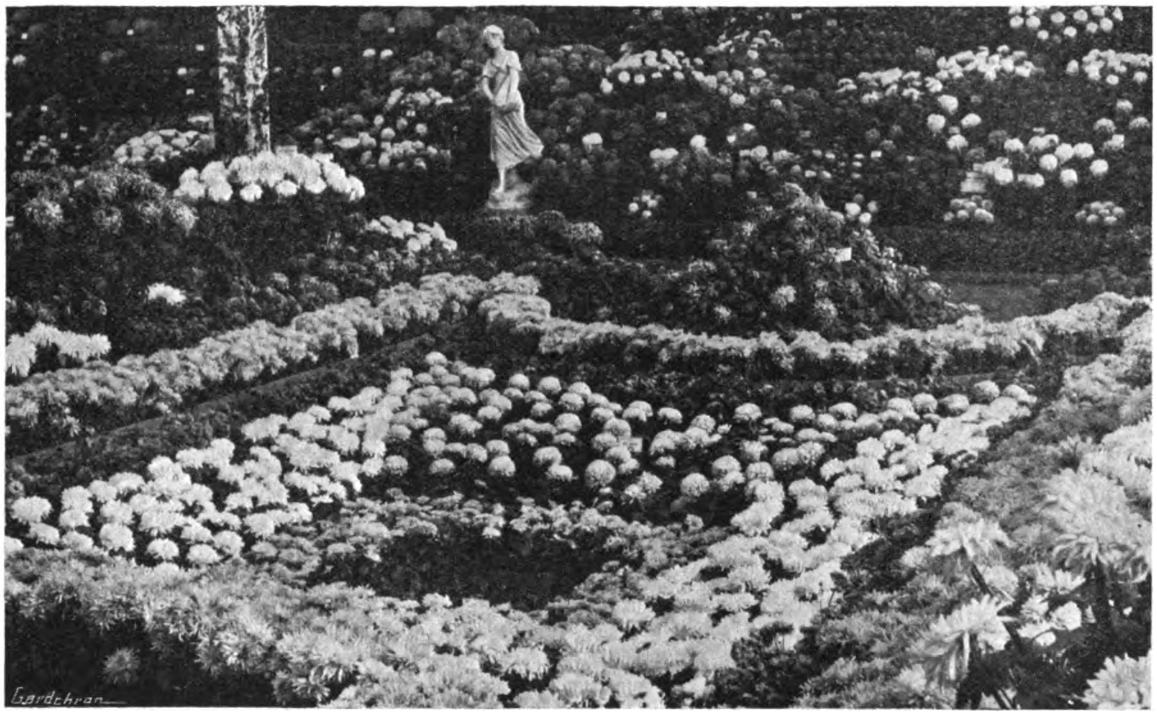


FIG. 124.—VIEW OF MESSRS. VILMORIN-ANDRIEUX AND CO.'S EXHIBIT AT THE PARIS SHOW.

MM. Vilmorin-Andrieux showed, not for competition, a very notable collection of Chrysanthemums (see Fig. 124), consisting chiefly of large-flowered specimens and unnamed novelties. In the foreground was a square group with a hollow centre, with lines of white and pink, very artistically arranged, which proved most effective. At each end was a flattened pyramid of the variety Blanche Delcloque, pink, and all round the square group were fine specimens of pink, russet, white, and other colours. Among the most remarkable specimens were Banquise, a white, loose floreted variety ; Cavatine, chamois ; Vice-Président Lionnet, pink ; and La Beauce, yellow.

M. G. Truffaut, of Versailles, brought a group, which was placed facing the one previously described, consisting of plants exhibiting the very highest culture. Among the best of the very large flowers were Mrs. R. C. Pulling, yellow ; Mrs. Gilbert Drabble, white ; Majestic, bronze ; Ville de St. Germain, pink ; Ami Paul Labbé, russet ; No. 304 ; and Salonica.

M. Laveau, of Boissy St. Léger, had a very fine exhibit of blooms, and, in particular, one superb plant, Mme. Rigal, a brick-red sport from the variety Salonica. M. Laveau obtained the premier award of the C. P. Cup for the six most remarkable flowers, with enormous heads of the variety H. E. Converse, golden with fawn reverse.

Among other exhibits of Chrysanthemums were those of MM. Cornu et Oudot, of Colombes, who showed large flowers of Mrs. Gilbert Drabble, white ; Mrs. J. Gibson, pink ; and Chrysanthémiste Oudot, bright yellow. Mme. Veuve Martin, of Champigny, had a collection of large-flowered varieties and unnamed novelties, the former including Baby Guy, pure white ; Epreville, white with pink reverse ; M. Philippe Rivoire, brownish-red ; and Louisa Pockett, white.

M. Féron, of Garches, showed Masterpiece, Master Rex, Edith Cavell, and Mrs. Algernon Davis ; M. Lochot, Pierrefitte, had Undaunted, pink ; Yvette Lochot, pure white, and Ville de Paris, pinkish white. There were also collections from M. Morin, of La Rochelle, unnamed novelties ; from the City of Paris Arboricultural College ; from M. Lévêque, Ivry, market varieties ; from M. Landrait, Paris ; M. Caulier, Gouvieux, Oise ; and M. Chrétien, of Cherbourg.

Among other plants exhibited, MM. Cayeux and Le Clerc, of Paris, showed a fine collection of cut Dahlias, including most of the best varieties now in commerce, notably the new decorative sorts, with rigid stems holding the flowers well above the foliage. Particularly noticeable were Mme. Victor Cayeux, coppery yellow ; Insulinde, yellow ; Flambeau, bright pink ; Gloire d'Enkhuizen, salmonish-yellow ; King Harold, deeply coloured ; and Jean Chazot (re-christened in America by the name of "Gay Paree").

MM. Nonin, of Châtillon sous Bagneux, also showed a fine lot of cut Dahlias, including Jkr. van Tets, Mme. Diesmy, and Red Cross.

There were several very beautiful exhibits of Carnations : M. Lochot, of Pierrefitte, had Blanche Pelleport, a handsome white variety ; MM. Idot et Durieux, of Croissy, showed Yser, yellow, and Madame Paul Lécolier, pink ; and M. Ullern, Honfleur, staged Président Millerand, red-streaked. MM. Lévêque, of Ivry, showed a number of fine plants in pots ; and MM. Vacherot and Lecoufle, Boisy St. Leger, some pretty varieties in cut-flowers, among which were M. Jeannet, maroon-red ; La Joconde, pink ; Maurice Lecoufle, a fine violet ; the flowers relieved by Nephrolepis Mauricii, with finely-cut, fringed foliage.

Cyclamens were represented by a very pleasing exhibit sent by M. Kempnich, of Woippy (Moselle), the plants of which were well furnished with flowers, and the stems rigid and long, and also by the pretty specimens of M. Aubert-Maille, of Tours, in varied and pleasing colours.

Tuberous Begonias were shown by MM. Vallerand Frères, of Asnières, and M. Billard, of Le Vésinet.

The Maison Férard, Paris, showed herbaceous plants, their exhibit also comprising a little Alpine scene, with a mossy ravine ; and M. Thiébaut, also of Paris, had a choice collection of Alpine and hardy plants. M. Weiss, of St. Cloud, showed a pretty Japanese landscape, with a red, black, and golden bridge, a path with stepping stones, dwarfed specimens of Chamaecyparis, Thuya, and Pinus, and miniature Alpine plants such as Sempervivum, Crassula, Sedum, and Hedera conglomerata erecta.

A very curious exhibit was sent by M. Graef, of Orleans, consisting of tufts of Mistleto on young Apple shoots, obtained by germination of the seeds on the bark (see p. 335).

Several fine collections of Roses were shown by MM. Dephesne, of Vitry, Lévêque, of Ivry, and Nonin, of Châtillon sous Bagneux among the best varieties noted were Golden Emblem, pink; Souvenir de Claudius Pernet, yellow; Bénédicte Séguin, deep pink; Souvenir de Gabriel Luizet, Mme. Butterfly, Columbia, and Châtillon-Rose.

As in previous years a collective exhibit was staged by the Orchid Committee in a small room apart, specimens being contributed by all the chief growers in the Paris district. A certain number of Certificates of Merit were awarded, for example:—

Brasso-Cattleya Nerto, a large, pink flower, with fimbricated labellum of a deeper shade and a yellow centre (to M. Perrin).

Brasso-Cattleya Roland, a pink flower, with labellum of deeper shade, and Cattleya Sahara, violet-red (to MM. Maron et Fils).

Laelio-Cattleya Barrès, with yellow petals and purplish-red labellum, and Oncidium Boissyanum, flowers large, with a bright yellow labellum (to MM. Vacherot et Lecoufle).

Cattleya labiata × amabilis, pink, with deeper coloured labellum (to M. Le Blevenec).

The Julien Potin Cup for the finest flower exhibited was awarded to M. Marcoz for Cattleya Mme. Bokanowski, with a large, bright, pink flower, the labellum, of a deeper shade, being delicately streaked with yellow.

The exhibits of fruits included comprehensive collections of Apples and Pears from growers of the Paris district, MM. Nomblot-Bruneau, of Bourg-la-Reine; MM. Croux et Fils, of Châtenay, and MM. Moser et Fils, of Versailles. The Versailles College of Horticulture also sent an excellent collection, including, besides many different varieties of Apples and Pears, Peaches Belle Impériale, Téton de Vénus, Belle Henri Pinaut, and some large specimens of Salway. Very fine exhibits of hothouse Grapes were staged by MM. Whir, of Deuil, Parent, of Rueil, and Salomon, of Thomery.

As usual, MM. Vilmorin-Andrieux showed a splendid collection of vegetables, very artistically arranged. M. G. Truffaut, of Versailles, also showed excellent vegetables along with his exhibit of Chrysanthemums, and vegetables were likewise well represented by the exhibits of the City of Paris Arboricultural College and the Igny College of Horticulture.

M. Picard, of Courville (Eure et Loir), showed a fine and well-varied collection of hybrid Gourds. Outside the hall, in the garden, were some excellent collections of trained fruit trees, from MM. Nomblot-Bruneau, of Bourg-la-Reine, MM. Croux et Fils, of Chatenay, and M. Chauffour, of Versailles. MM. Moser, of Versailles, exhibited in unique fashion all the forms of trained trees suitable for a commercial fruit-orchard.

Among the exhibits of ornamental trees and shrubs were those of MM. Thuilleaux of La Celle St. Cloud, Lécolier, also of La Celle St. Cloud, and Martin, of Louveciennes.

Numerous Certificates of Merit were awarded to new Chrysanthemums; no fewer than nine of these went to MM. Vilmorin-Andrieux, seven to Mme. Veuve Martin, of Champigny, and seven to M. Morin, of La Rochelle. Among the most interesting novelties were *Le Champsaur*, magenta purple, with glazed white reverse; *Le Graisivaudan*, garnet red, with yellow lake reverse; *La Sundgau*, a round, incurved variety, with straw-yellow petals (MM. Vilmorin); *Souvenir du President Labbé*, red with ochre reverse; *Canary*, sulphur-yellow; and *Véronique*, lilac (Mme. Veuve Martin); *Deuil de Paul Labbé*, garnet-red; *Mandarin*, yellowish salmon, a market variety; and *Tapis d'Or*, yellow (M. Morin); *Mme. Terreau*, a red single (MM. Férard); *Président Cassez*, a red sport from *Reine de Chypre* (M. Aubépart); and *Ondine*, white with green centre, a market variety (MM. Nonin).

A Certificate of Merit was also awarded to MM. Vallerand Freres, of Asnieres, for a very fine tuberous Begonia with large, double-yellow flowers, named *Gerbe d'Or*.
A.M.

BRIGHTON, HOVE AND SUSSEX HORTICULTURAL.

November 11, 12, 13.—Those who have fears for the future of horticulture in this country and believe that gardening societies and flower shows are likely to die out in course of time may take heart from the splendid success of the Brighton Society, which has enrolled no fewer than 280 new members this year and needs only a relatively small number more to bring the total membership to 1,000. That this attainment will be reached in the near future is certain, for the Society has a management committee that leaves nothing undone to ensure success, and those who visited the autumn exhibition which opened on Tuesday last, had proof that success even with flower shows is still possible when undertaken in the right spirit by keen gardeners. The love of flowers is universal and there is no reason why gardening societies should not enlist the patronage of all influential residents and especially the town or civic authorities. Brighton gives a splendid lead in this direction for its show was held under the patronage of the Mayor, who presided at the luncheon, and the Corporation, whilst the Public Works Department decorated the orchestra in the Dome with a magnificent bank of flowers. The exhibition was held as usual in the Corn Exchange and Dome, both spacious buildings but not the best lighted for a flower show. However, "the Show's the thing," and this exceeded in importance and number of entries any previously held under the auspices of the Society; the number of entries was 650.

Chrysanthemums were the chief feature and there were also splendid exhibits of both fruits and vegetables. Numerous trade firms displayed groups, these being of high merit generally and arranged in the best exhibition style. The weather was gloriously fine for a November show and the exhibition attracted large numbers of visitors.

Open Classes.

Chrysanthemums.—There were two excellent exhibits in a class for a group of Chrysanthemums with a diameter of 12 feet and the better was shown by Mr. W. H. Apted, Southdown House, Worthing. Foliage plants were admitted, for effect, and the group was a very pleasing effort. The Chrysanthemums included large Japanese varieties with Incurved, Single and Decorative varieties, relieved with Coleus, Grevillea robusta, Abutilon megapotamicum, Panicum and similar subjects, with a Dracaena crowning the whole; second, W. H. Vokins, Esq., Beechwood, Withdean (gr. Mr. W. J. Scott), whose exhibit was but little inferior to the former and very well arranged.

Five competed in the important class for twenty-four Japanese blooms, distinct, and the first prize was awarded to F. E. Richards, Esq., Coombe Hall, East Grinstead (gr. Mr. G. Tyler), this and the second prize exhibit, shown by Capt. Almack, Danny Park, Hurstpierpoint (gr. Mr. R. W. Wheare), being much in advance in quality of the three others, of whom Mr. W. H. Apted gained the third prize. Mr. Richards' flowers were of the best exhibition quality, large in size and finely coloured. The varieties included Mrs. B. Carpenter, Majestic, R. C. Pulling, Mrs. J. Gibson, Princess Mary, Louisa Pockett, Mrs. F. Slack and Miss J. Roots. Notable varieties in the second prize exhibit were Louisa Pockett, Mrs. Algernon Davis, Queen Mary, Mrs. Gibson, Victory and Mrs. Drabble.

For twelve Japanese blooms, distinct, there were five excellent entries, the best of the exhibits being shown by Mr. Richards, followed by C. D. Haslam, Esq., Danehurst, Uckfield, with Mr. Apted third. The blooms shown by Mr. Richards were much superior and of large size. His varieties included Louisa Pockett, Mrs. R. C. Pulling, General Pétain, Mrs. G. Monro, Majestic, and Pandora. The second prize collection included first-class blooms of Mrs. F. Jolliffe, Mrs. R. Luxford, Princess Mary and Louisa Pockett; third, Mr. Apted.

In the smaller class for six Japanese blooms, distinct, the better of two exhibits was shown by Mr. C. D. Searle, Eastbourne, the blooms of A. F. Tofield, Majestic, Edith Cavell and Sir E. Letchworth being of good average merit; second, Mr. N. D. Brooks, Hove.

The blooms shown in the vase classes were of a high standard of excellence. The first prize in the class for three vases of Chrysanthemums, distinct, five blooms in each vase, was awarded to Mr. Richards, whose flowers of General Pétain, Mrs. R. C. Pulling and Majestic, were superb; second, Mr. Apted, who had extra good blooms of the yellow Mrs. R. C. Pulling; third, Mr. Erley, Eastbourne.

The best vase of six Japanese Chrysanthemums was also shown by Mr. Richards, the varieties Louisa Pockett, Majestic, Mrs. J. Gibson, General Pétain and A. F. Tofield, being of remarkable quality; Mr. Apted showed flowers of sterling quality, and was placed second among four competitors. The best three vases of single Chrysanthemums were shown by Mr. W. H. Robbins, Nurseryman, Lewes. The sorts displayed were Mensa, Molly Godfrey, and Phyllis Cooper, the last a superb yellow variety; second, Mr. W. G. Bright, Nurseryman, Hove. The best single Chrysanthemums, disbudded, were shown by Mr. Bright.

Only one exhibit was forthcoming in the class for six vases of decorative Chrysanthemums and the exhibitor was Mr. Erley, who was deservedly awarded the first prize for an exhibit of much excellence, in which the varieties Reine, Baldock's Pink, and December Gold, figured conspicuously. The best six bush Chrysanthemums were shown by Mr. R. Moore, Lewes. Viscount Cowdray, Paddockhurst (gr. Mr. R. Middleton) showed the best Primulas; Mr. W. H. Robbins, the best six table plants; and Lady Rosabelle Brand, Little Dene, near Lewes (gr. Mr. F. Down), the best three Begonias of the Gloire de Lorraine type.

There were many tables decorated with flowers. The class, open only to ladies, for a decoration of Chrysanthemums and foliage, was strongly contested, and Mrs. A. M. Swann, Haywards Heath, excelled with a very pleasing arrangement of single Chrysanthemums, daintily relieved with Adiantum Fern, Grasses, Golden Privet, etc., and with festoons of Selaginella.

Fruit.—There were twelve classes for fruit in the open section and some choice produce was shown.

The black Grapes were splendid: there were two classes for Grapes; for white and black varieties respectively. The Muscats shown by C. T. Chandless, Esq., Sherrington Manor, Berwick (gr. Mr. F. W. Chilvers), were nicely finished, and the bunches were heavy, but they had been trimmed and were a little sparse. These were awarded the first prize, and Lady Hutt, shown by Viscount Cowdray, was placed second.

Excellent bunches of Gros Colmar, shown by Messrs. Douglas Bros., Ltd., Worthing, reminded one that Brighton is a Grape-growing centre of importance, and the berries could scarcely have been of larger size or better finished. Almost equally good were the bunches of Black Alicante to which the second prize was awarded. Shown by C. T. Chandless, Esq. (gr. Mr. F. Chilvers).

Nine Classes were devoted to Apples and Pears and both of these fruits were shown very finely. The best basket of a culinary variety of Apples was shown by Mr Mockford, Cowfield, who had superb fruits of Peasgood's Nonesuch; second, Mr. E. ELEY with Lord Derby.

Mr. C. T. CHANDLESS excelled in the class for four dishes of dessert varieties with Chas. Ross, American Mother, Rival and Gascoyne's Scarlet, all of the very highest excellence.

In the corresponding class for culinary varieties there was splendid competition and the first prize was won by Mr. MOCKFORD, whose Newton Wonder was of outstanding quality amongst exhibits of very great merit generally.

The best Pears were shown by Mr. A. H. PARSONS, Lewes, his varieties being Doyenné du Comice and Pitmaston Duchess: whilst for one dish ot a dessert Pear, Miss H. M. SCARR, Brighton, excelled with magnificent fruits of General Todleben.

VEGETABLES.—Prizes were presented by Messrs. Sutton and Sons for a collection of six kinds, distinct, and no fewer than six good exhibits were forthcoming. The premier exhibit was staged by Mr. E. ELEY, who showed grand New Red Intermediate Carrots, Ailsa Craig Onions, Majestic Potatos, Solid White Celery and Cauliflowers. Second, Lady ROSABELLE BRAND (gr. Mr. F. Down). In the Premier Seed Company's class for a collection Sergt. LEONARD WHEELER, Brighton, was first.

Mr. SEARLE won in the Open Championship Class for Sussex growers with magnificent Potatos, Onions, Celery, Leeks and Brussels Sprouts.

Messrs. Tilley's class for vegetables resulted in Mr. W. IMFIELD, Brighton, being placed first; Mr. WHEELER, second; and Mr. E. HALL, third, all worthy exhibitors.

In the class for a collection of vegetables of four distinct varieties, open to exhibitors who have not won a first prize in the Society's show for collections of vegetables during the past three years, the first prize was won by Mr. M. GOATCHER, Brighton, who showed grand Celery, Leeks, Onions and Potatos, a very fine effort for a new exhibitor.

In the class for a collection of four dishes of Potatos Mr. SEARLE won the first prize in a strong competition, showing The Bishop, Majestic, King Edward and Duke of York.

The best Onions were shown by Mr. G. CRONE, Brighton; the best Carrots by Mr. G. S. PERKINS, Seaford; the best Leeks by Mr. PERKINS; the best Parsnips by Mr. A. O. COSHAM; the best Brussels Sprouts by Mr. A. JUPP, Brighton; the best Potatos by Mr. H. CHERRIMAN; and the best Celery by Mr. MOCKFORD.

NON-COMPETITIVE EXHIBITS.

Gold Medals were awarded to Messrs. SUTTON AND SONS for vegetables; Messrs. JAMES BOX, Ltd. for Chrysanthemums, Cyclamens, and sprays of berried shrubs; Messrs. KEITH LUXFORD AND Co. for Chrysanthemums; Mr. P. WARNER ABBOTT, for Chrysanthemums; Messrs. W. BALCHIN AND SONS, Ltd., for a floral group and floral designs; and THE BARNHAM NURSERIES, for fruit.

Silver-gilt Medals were awarded to Mr. FRANK WOOLARD for Chrysanthemums, Roses and fruit; Messrs. J. CHEAL AHD SONS, for fruit; Mr. H. HEMSLEY, for fruit; Messrs. DANIELS BROS., for fruit; THE PREMIER SEED Co., for vegetables; Mr. R. HIBBEN, for Gloire de Lorraine Begonias; and Messrs. GRIFFEN AND Co., for fruits and flowers,

Silver Medals were awarded to Messrs. G. BUNYARD AND Co., Ltd., for Apples; Mr. W. BRIGHT, for Primula obeonica of a very beautiful old-Rose colour; and Messrs. TILLEYS, for fruits and vegetables.

Bronze Medals were awarded to Messrs. G. MILES AND SON, for Chrysanthemums and pods of Iris Pseudacorus; Mr. A. PRATT, for Pansies and Polyanthuses; and Messrs. REAMSBOTTOM AND Co., for St. Brigid Anemones.

MYSORE HORTICULTURAL.

THIS Society's summer show was held in the Albert Victor Conservatory in the Lal-Bagh Gardens, Bangalore, on August 2 and 3, with the help of the Public Gardens Department. The weather was bright on both days, and the number of visitors was over one thousand on the first and two thousand on the second day, besides about three thousand school children, who were admitted free. Though the exhibits were not so numerous as in some previous shows, yet their quality was very high, in spite of the hot weather, which has been particularly severe this year. The decorative effect of the arrangement was much appreciated by the visitors.

The exhibits were set out in beds edged with green turf and the foot-paths kept scrupulously clean and neat. The hall (Fig. 125) is in the shape of a cross. Along the borders of the main portion groups of mixed foliage plants, collections of Codiaeums, Dracaenas, Ferns, and rare foliage plants were arranged and exhibits of Dahlias and Gladiolus were staged against the creeper-clad, trellis-sides of the building. Between these and the middle main beds were long narrow beds of perennials such as Chrysanthemums, Carnations, Geraniums, and Achimenes. The brightest show, however, was provided in the large beds which contained masses of annual flowers such as Phlox, Verbena, Pink and Aster. In the centre of the hall there was an oval bed of Caladiums with a large Palm (Kentia Forsteriana) in the middle. On either side of this there were two semi-circular beds, one containing collections of Antirrhinums with a border of Pansies, and the other containing Celosias and Balsams. The wings of the conservatory were furnished with exhibits of perennials such as standard and bush Roses, Cannas, Heliotropes, Salvias, etc. The left wing led into the expansive tent containing table decorations in the middle, and decorated vases and baskets, bouquets and cut flowers on the sides, all arranged on tables. The other wing opened out into a large area covered by five tents in which were arranged fruits and vegetables on Bamboo staging.

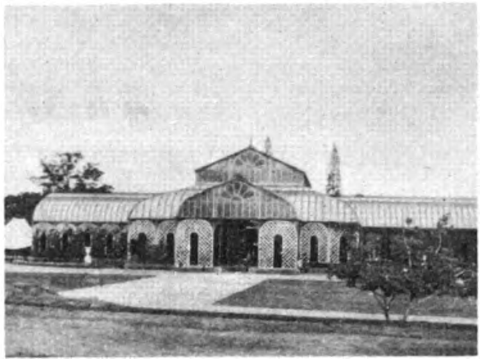


FIG. 125.—THE SHAW HALL OF THE ALBERT VICTOR CONSERVATORY, LAL-BAGH, BANGALORE.

From the gardens of the palace of His Highness the Maharaja of Mysore came some of the finest exhibits in the show, though they were not for competition. The foliage group, Maiden-hair Ferns, Rex Begonias, and Roses were noteworthy. The collections of beautiful varieties of Dahlias and Cannas shown by the Lal-Bagh Botanic Gardens were also non-competitive.

Some of the best exhibits were the following:—

Mrs. C. C. WATSON's Roses, Geraniums, Cannas, Perennial Phloxes, Salvias, Nasturtiums and Antirrhinums; Mrs. A. R. BANERJI's Fuchsias, Heliotropes, Balsams, Double Petunias, Pansies, Verbenas, Celosias, and Sweet Peas; Mrs. A. F. COWDREY's Dahlias, Carnations, and Cinerarias; Mr. THIRUVENGADASWAMY MUDALIAR's Chrysanthemums, Dahlias, Asters, and Pinks; Mr. SANTHOJI RAO's Phloxes; Mr. G. VICKERY's Lobelias and Coreopsis; Mr. K. S. GOPALA SWAMY IYENGAR's Codiaeums; Messrs. VENKATASWAMY RAJU AND SON's Caladiums, double and Ivy-leaved Pelargoniums, shrubby and tuberous-rooted Begonias, Dahlias, Gladiolus, Achimenes, Petunias, Asters, and Pinks; and the EMPIRE NURSERIES' group of Dracaenas and new Codiaeums.

In the Cut Flower section, some of the best exhibits were Mr. P. B. SUBRAMANYAM's collection of Indian scented flowers; Mrs. A. F. COWDREY's Roses, Sweet Peas, and Chrysanthemums; Mr. W. H. THOMSON's Dahlias and Begonias; Mr. MUNIVENKATAPPA's hand bouquets and sprays; Mr. MARAPPA's Indian flower garlands; CAPT. SMITH's and Mrs. G. H. GARDENER's baskets of flowers, and Mrs. TOOMEY's and Mrs. G. H. KRUMBIEGEL's decorated tables.

The prizes for the chief exhibits in the flower-show and those for the successful gardens in the recent Garden Competition were kindly presented by Her Highness the Maharani of Cooch Behar, who was accompanied by His Highness the Yuvaraja of Mysore. Besides the Challenge Cup which His Highness graciously presented as usual, and the cup and medals awarded by the Horticultural Society, the following well-wishers of the Society gave prizes chiefly Silver Cups:—Sir Hajee Ismail Sait, Mrs. A. R. Banerji, Mr. Mathradas Narandas, Messrs. Barton, Son and Co., Messrs. Spencer and Co., Messrs. Wrenn Bennet and Co., Messrs. C. Krishnayya Chetty and Co., Messrs Marlam and Sons, and a gentleman who did not wish his name to be known.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

THE annual festival dinner of this Society was held on the 6th inst. at the Imperial Hotel, Russell Square, under the Presidency of Lionel de Rothschild, Esq. There was a large gathering of members and friends of the Society, and the company included Sir William and Lady Lawrence, Lord and Lady Bessborough, Mrs. Rothschild, Mr. W. R. Dykes, and Mr. G Loder.

The toast of the evening, that of the "United Horticultural Benefit and Provident Society," was proposed by the chairman, who said that the Society was so flourishing that it did not require any outside assistance. That fact alone ought to commend itself to every gardener, and the membership ought to increase from 4,000 to 40,000. The Annual Report stated that probably one of the reasons why the Society is not so well known as it should be was because it has no branches. Mr. Rothschild said that might be so, but nevertheless, the membership extended all over Great Britain and Ireland. As he derived so large an amount of pleasure from gardening he would do everything he could to help and foster the Society. It was up to everybody employed as gardeners to make it better known in the different villages and country-sides where they lived, and then the Society would be able to confer its benefits on more gardeners in the country.

This toast was responded to by Mr. C. H. Curtis, who thanked Mr. Rothschild for presiding that evening, and reminded the Chairman that his father, Mr. Leopold de Rothschild, had been their patron, and on one occasion occupied the chair at their annual dinner, so that the Rothschild family had been associated with the Society for a long time. Mr. Curtis said so far as finance was concerned the Society could look after itself, but he hoped that when those present met their friends who owned large gardens they would tell them of the work of the U.H.B.P.S. The amount of sick pay the Society had paid out to members who have been ill came to £16,262, and gardeners belonging to the Society have been assisted by the Distress Fund to the extent of £5,745. One man who had fallen on bad times had received during the past ten years no less than £300 14s. 5d, in sick pay, and now, being quite unable to work, receives from the Society's funds a small grant of five shillings a week, which will continue so long as he lives. Provision is made for the widows of deceased members. When a member dies the Society doubles the sum left, according to scale, in their deposit account, for the widow. The State Section had paid out £5,865 in sick pay since 1913. Maternity claims are considered and they have totalled £1,379. The Committee is able to provide extra benefits, such as surgical and dental treatment, and on these benefits alone a sum of £378 has been expended. Mr. Curtis said the Society had invested funds amounting to £65,176, and this year, as one of the trustees, he had already invested another £1,000, and an additional £1,000 was waiting for investment, this bringing the total sum up to the end of this year to something like £67,000

The toast of "The Visitors" was proposed by Mr. A. Bedford, the Treasurer, and ably responded to by Lord Bessborough. Other speakers were Sir William Lawrence and Mr. Joseph Cheal.

During the evening an excellent programme of music was rendered.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

The one hundred and twelfth annual meeting of the above Society was held on Wednesday, November 5, when Mr. John Bell presided over a large attendance of members. In an interesting review of the work of the Society, it was stated that the membership was seven hundred and fifty, and that in conjunction with the Corporation of Glasgow, the annual show would be held at the Kelvin Hall, in September, and that £1,500 would be offered in prizes. The treasurer's report showed a credit balance of £109 8s. 2d. after deducting a donation of one hundred and five guineas given to the Hospital for Diseases of the Ear, Nose, and Throat, while the surplus now stood at £756 19s. 0d. In addition to his salary, the Secretary was voted an honorarium of £25.

Sir John Reid was re-appointed President. In thanking the meeting for the honour conferred on him, Sir John described gardening as one of the noblest professions, and said the more they encouraged amateur gardening the better it would be for the country at large. He made several suggestions regarding the improvement of the prize schedule and advocated a greater recognition of novelties, as these constituted an attraction to the public at flower shows.

Mr. McAlpine, Tollcross, and Mr. Torrance, Busby, criticised the judging of the Chrysanthemum classes at the 1924 show, and Mr. Buchanan Kippin also commented on the system of judging the class for twenty-four dishes of fruit, which had caused a good deal of bad feeling. Instead of points being given collectively, he proposed that points be credited to the individual dishes. He also urged the Directors to arrange with the railway companies to provide cheap fares during the four days of the show.

In the polling for the election of twelve directors, Mr. James Miller, the father of the Board, was defeated, the successful candidates being as follow:—Nurserymen—D. A. Torrance, Joseph Dobson, John Smillie, and Thomas Heron; Gardeners—K. Campbell, Henry Reid, John Stewart, and William Ferguson; Amateurs — James Kerr, James Garrivet, J. G. Williamson, and G. Hunter.

Mr. McAlpine was given an Award of Merit for the following varieties of Chrysanthemums:—Jean McAlpine, white; Cup-tie Ritchie, yellow; and Mary Houston, crimson. The last-named variety has been in bloom since July 10 and has received four First-Class Certificates and three Awards of Merit.

ANSWERS TO CORRESPONDENTS.

Antirrhinum Disease and Formaldehyde: *W. S.* The strength of the solution used for the soil sterilisation, viz., a two per cent. solution of the forty per cent. formaldehyde liquid, was correct, and the soil should be thoroughly wetted with it, but the seeds were sown too soon after treatment of the soil. After treatment of soil with chemicals for sterilizing it, at least a fortnight should be allowed to elapse before seeds or young, tender plants are put into it—especially if the soil is left untouched after treatment. Exposure in a warm place and turning of the soil hasten the disappearance of any harmful effects of the chemical treatment on seeds or seedlings. It is advisable to treat the soil in a heap before using it for making up seed boxes, etc. In his book on *Diseases of Glasshouse Plants*, Dr. Bewley states that after watering soil with a two per cent. solution of formaldehyde to sterilise it, the heap should be covered with tarpaulins or sacks sprayed with the solution and left so covered for forty-eight hours, after which time the covering is removed and the heap opened out to dry. This is accelerated by constant turning with clean, sterilised tools. He further states that "when the soil *ceases to smell of formaldehyde* it is ready for use." Cheshunt Compound may be watered on the soil when plants are growing or immediately after sowing seed, but although this gives excellent results against "damping off" diseases caused by species of Phytophthora it is not likely to be a sufficiently powerful soil steriliser to kill off effectively the more resistant stages of the fungi causing disease in Antirrhinums which are likely to occur in soil. It may be mentioned that preliminary trials have shown that for sterilisation of Antirrhinum seed itself soaking for half to one hour in a dilution of the forty per cent. formaldehyde of one in four hundred of water did not seriously affect the germination of the seed and should be sufficient to kill any thin-walled disease spores which may be present on the seed. After treating with the diluted formaldehyde solution the seed should be washed with water and spread out to dry. The method of treatment is similar to the standard treatment of Celery seed against the Septoria leaf-spot disease.

Coccus Attacking Beech Tree: *G. P.* This pest is very difficult to control when a large tree is attacked. The treatment consists in the cutting and burning of the infested branches. The moths should be caught on the tree trunks and destroyed at the end of June.

Celery Spot Disease: *A. W. P.* The Celery is affected with the Celery-spot disease due to the fungus Septoria Apii. So soon as the young plants are established in the trenches they should be sprayed with Burgundy mixture or Bordeaux mixture, the application to be repeated every three or four weeks. You can do nothing to control the disease at this stage, and it is advisable to use the Celery without delay.

Gladioli for Exhibition: *A. E. O.* We cannot recommend growing Gladioli in kipper boxes for exhibition flowers. Three to five bulbs placed in a nine-inch pot is the better plan. Use good virgin soil, with little or no manure, leaving sufficient room for two or three light top-dressings. Attention in watering is essential; water thoroughly when the growth is developing freely and water again only when the top soil takes on a dry appearance. An even temperature of 50° to 55° will result in early, large flowers with good foliage. Higher temperatures tend to favour weak growth and sickly foliage. If however, you intend growing for the market, we would suggest planting the corms in beds or on benches at a distance of five inches to six inches apart. The white variety you mention is good, but the other variety would not be considered up to exhibition standard. We know of no English book on the subject, but there are several published in America and one in Norway.

Names of Fruit: *A. J. C.* Probably Apple Royal Jubilee; Pear Beurré Hardy. *W. J. M.* 1, Worcester Pearmain; 2, Stirling Castle; 3, Harvey's Wiltshire Defiance; 4, Reinette de Canada; 5, Cox's Pomona; 6, Lane's Prince Albert. *M. D. B.* Paradise Apple. *H. A.* 1, Calville Blanche; 2, Keswick Codlin; 3 and 5, Cellini; 4. Rival; 6, Dean's Codlin; 7, Sturmer Pippin; 8, Stirling Castle; 9, Margil; 10, Lane's Prince Albert. *G. L.* 1, Emile d'Heyst; 2 and 6, Beurré Diel; 3, Le Lectier; 4, Easter Beurré; 5, Durondeau. *H. F. Z.* 1. Mangosteen; 2, Brockworth Park; 3, Gansel's Bergamot; 4, Catillac; 5, Délices d'Angers; 6, Glou Morceau; 7, Bergamot d'Esperen; 8, Maréchal de la Cour; 9, Marie Benoist; 10, Fondante de Cuerne; 11, Doyenné Gris; 12, General Todleben. *P. G.* 1, Roundway Magnum Bonum; 2, probably Golden Noble; 3, Egremont Russet; 4, local seedling of the Ribston type; 5, not recognised, deformed fruit. *M. D.* Pitmaston Duchess. *A. R.* Not recognised; specimens small and not in character. *G. H.* 1, probably Mabbott's Pearmain; 2, not in character; resembles Strawberry Pippin; 3, Striped Beefing; 4, local seedling; 5, Ribston Pippin; 6, not recognised; 7, King of the Pippins; 8, Brownlee's Russet; 9. Bramley's Seedling. *C. M.* Grapes Gros Colmar.

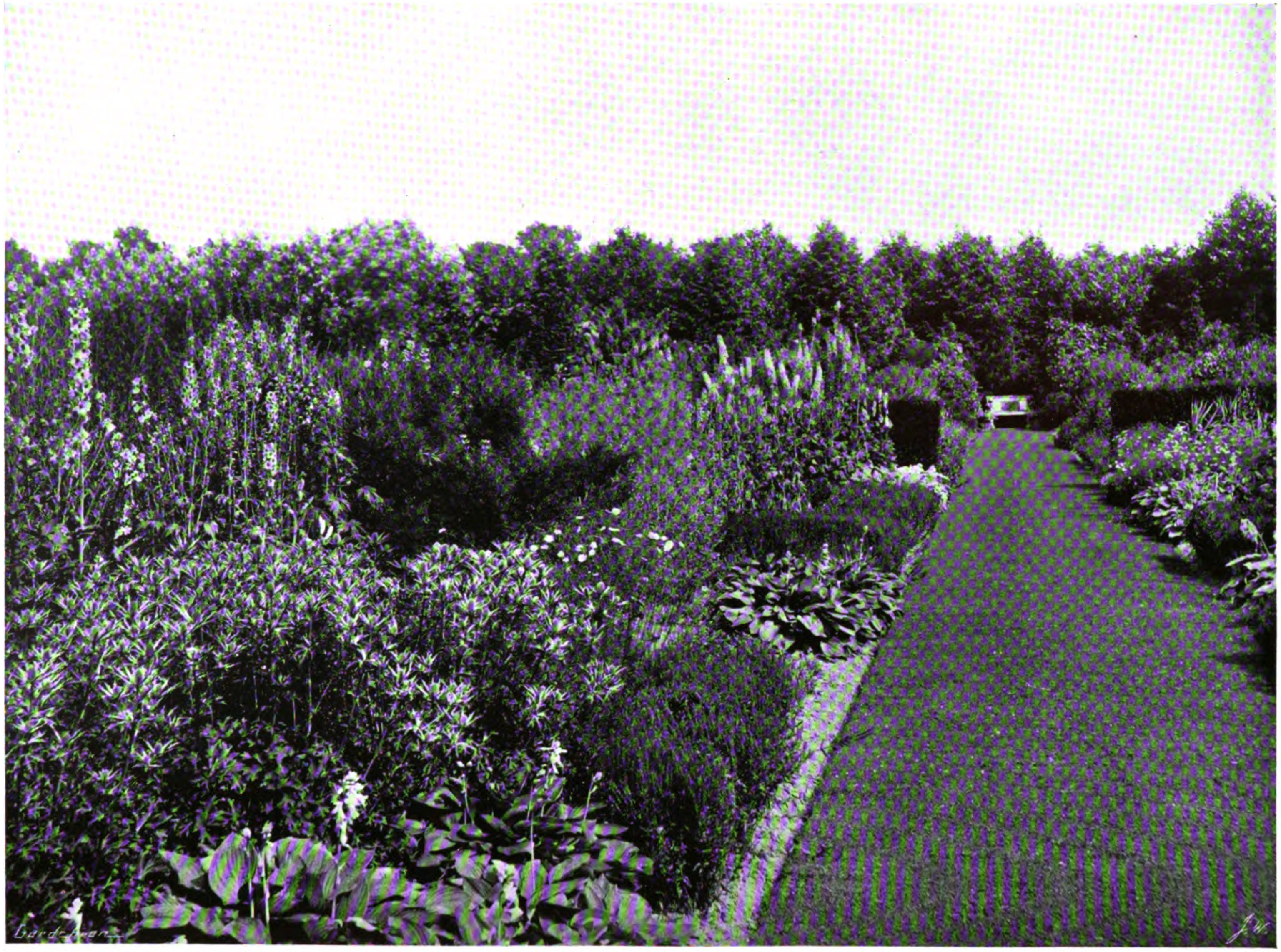
Names of Plants: *J. M.* 1. Sedum pulchellum; 2, Potentilla ambigua; 3, Artemisia lactiflora. *Old Subscriber.* 1, Achillea Ptarmica; 2, Claytonia sibirica; 3, Cotyledon sp.; 4, Gasteria sp.; 5, Mesembryanthemum sp.; 6, Helxine Soleirolii; 7. Euonymus latifolius argenteus variegatus.

Pear, Williams' Bon Chrétien Not Keeping: *F. J. G.* The reason why the Williams' Bon Chrétien Pears have not kept in storage is because they were allowed to remain too long on the trees. The fruits must have been almost fully ripened when they were gathered on October 2nd; had they been picked whilst green you would have been able to store and ripen them in the fruit room, although it must be remembered that this is an early variety and rarely keeps in condition throughout October.

Poplar Trees Dying: *A. W.* It is not possible to suggest with any degree of certainty a reason for the death of your Poplars. We are inclined to believe that the trouble is due to root conditions, brought about either by poor soil or unsatisfactory drainage. We advise you to open holes here and there near the roots, and try and find out whether there are conditions that are likely to be harmful. Before trees are planted on the site again be careful to work the ground and find out whether the subsoil drains well. It would also be wise to provide a quantity of fresh soil.

Tomato Leaf-Blotch Disease: *W. A.* The best method of controlling this disease is to pay strict attention to ventilating and watering. A dry atmosphere should be provided for the plants, and it is important to see that there is a free circulation of air in the house. Vaporising with sulphur is a more efficient means of checking the disease than dusting the foliage with flowers of sulphur.

Communications Received. — T. S. H.—J. S.—Kettering.—C. S.—Nemo.—W. J. D.—J. W. S.—H. F.—W. L.—J. G.—C. C. S.—W. H.—J. W. B.—H. M.



THE BLUE GARDEN AT PYRFORD COURT.

THE
Gardeners' Chronicle

No. 1978—*SATURDAY, NOVEMBER* 22, 1924

CONTENTS.

Agricultural research and plant breeding in Scotland 348
Alpine garden—
  Kirengeshoma palmata 351
  Tunica Saxifraga ... 351
Annuals for greenhouse and conservatory decoration 352
Banana-production within the Empire ... 348
Blue Garden at Pyrford Court, The 347
Books, Notices of—
  A Real A.B.C. of Gardening 357
  Rock Gardening in New Zealand ... 357
  The National Rose Society's Select List of Roses 357
Garden craft in the Canticles 354
"Gardeners' Chronicle" seventy-five years ago 348
Garden notes from south-west Scotland... ... 353
Glasnevin, notes from 353
Hardy fruit garden ... 358
Indoor plants—
  Decorative plants for Christmas 352
Orchid notes and gleanings—
  Cattleya Dowiana Rosita 349
  Cattleya Mrs. Gratrix 349
  Laelio-Cattleya Brilliant 349
Parks and gardens, public 358
Plants for a north aspect a few flowering and foliage 352
Potato crop in Scotland, the 358
Potato crop, the ... 348
Potato, the degeneration of the 347
Rhododendrons 356
Societies—
  Cardiff and District Gardeners' 362
  Kingston, Surbiton, and District Chrysanthemum 362
  National Potato ... 361
  Royal Caledonian Horticultural ... 362
  Royal Horticultural 360
  United Horticultural Benefit and Provident 362
Southport Floral Fete 348
Sprays, a new danger from poison 348
Trees and shrubs—
  Acer nikoense... ... 356
  Crataegus tanacetifolia 356
  The Alders 355
  The Hibiscus in cold districts 356
Vegetable garden—
  Onions for autumn sowing 359
Week's Work, the ... 350
Wild garden, the ... 352

ILLUSTRATIONS.

Address presented by the judges of the Southport Floral Fete to Alderman Aveling 348
Alnus viridis var. mollis 355
Chrysanthemum Mrs. R. Luxford, a fine specimen plant of 349
Kirengeshoma palmata... 351
Nertera depressa naturalised in a tennis lawn in Scotland 359
Silphium albiflorum 353

SUPPLEMENTARY PLATE.
The Blue Garden at Pyrford Court, Woking.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 41·2.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday November 19, 10 a.m.: Bar. 30·65 temp. 45°. Weather, dull.

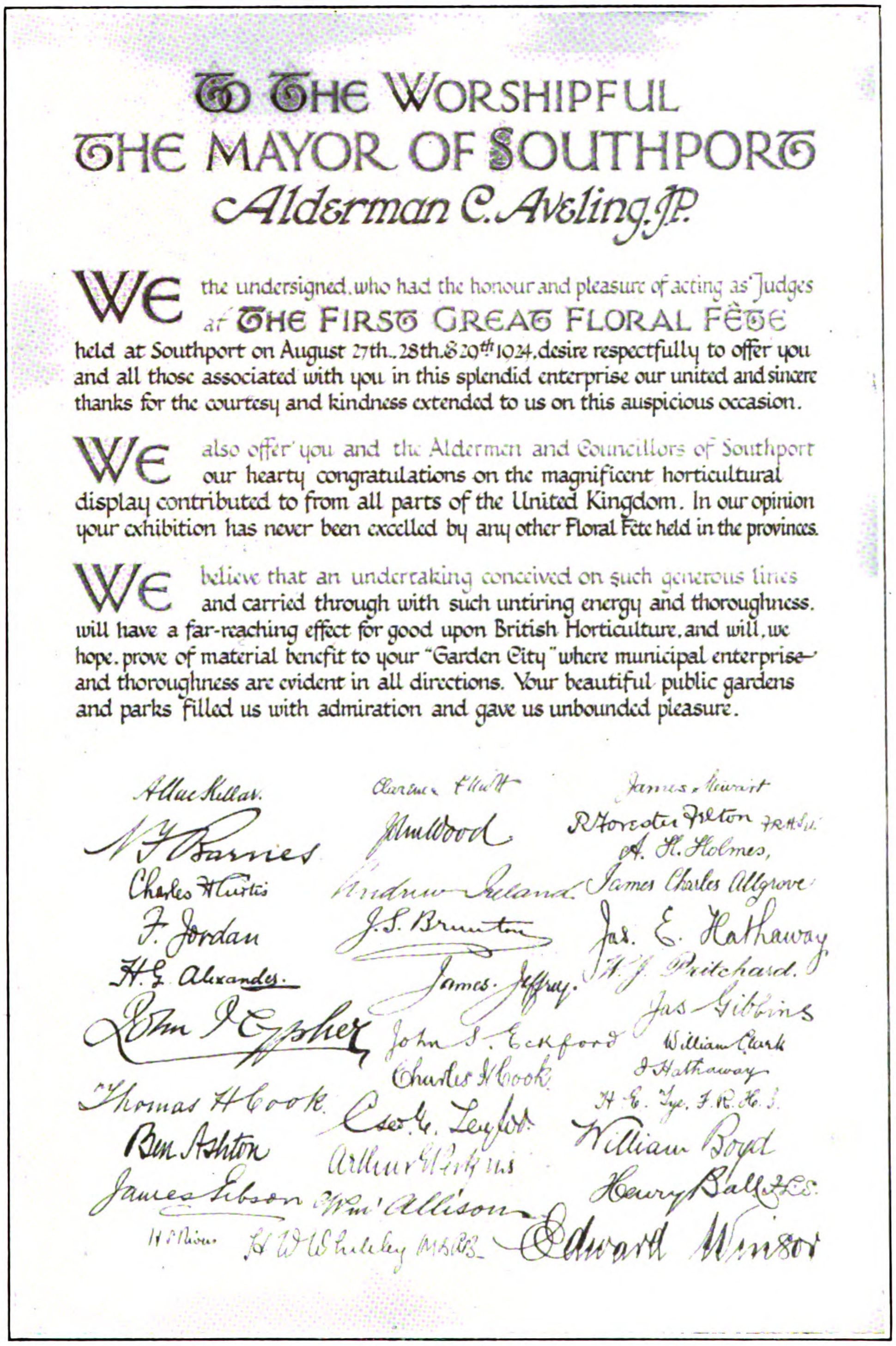
The Degeneration of the Potato.

GROWERS have been aware for at least one hundred and fifty years that cultivated varieties of the Potato are liable to degeneration. Some varieties "run out" quickly, and in many districts their yield dwindles until it is worth no one's while to grow them. Such a fate has overtaken Magnum Bonum—to cite only one example. Once a popular variety, it is now but little grown in this country. Yet it is still a popular variety in Sweden. The problem of degeneration is manifestly of great practical and scientific importance. Dr. Salamon, who lectured on the subject at the Annual Meeting of the National Institute of Agricultural Botany, and whose knowledge of the subject is great, estimates that the annual loss of yield due to degeneration amounts to not less than a ton to the acre. This interpreted in terms of cash would represent a yearly loss of about five million pounds. Although the fact of degeneration has long been known, and although the symptoms presented by degenerate strains, both in tuber and haulm, have been described again and again since the latter part of the eighteenth century, but little progress was made until recently towards the elucidation of the causes of degeneration. The view which prevailed for a long time is that degeneration is a symptom of senility—a premature old age. In support of this opinion appeal was made to the well-known fact that Potatos are and have been propagated year after year by vegetative means; that in some way not explained vegetative propagation leads to loss of vitality and that degeneration is a sign of that loss. That view must now be discarded. It never had the support of science, although it was often accepted by men of science. As Dr. Salamon pointed out, the Artichoke was introduced about the same time as the Potato. It is propagated vegetatively, and yet no variety suffers from degeneration. The Banana is one of the oldest cultivated plants. It is seedless; nevertheless, notwithstanding the centuries during which they have been propagated by vegetative means, the endless varieties of the Banana appear to have remained normal and undegenerated. Other examples might be given, all of which tend to indicate that there is no inherent necessity obliging plants reproduced vegetatively to deteriorate. Moreover, as Dr. Salamon has himself shown, degeneration may take place in a young race as readily as or even more readily than in an old race. Seedling varieties, for example, may within a year or two of their raising show the last extreme of degeneration and fail altogether to yield a crop. In the light of these facts it would appear certain that degeneration is not an intrinsic disease—due solely to some defect in the plant's organisation, but that it is of extrinsic origin—brought about by some agent from without. To that agent, or those agents, some varieties succumb more readily than others; but unless the agent or agents are present and produce their evil effects on the plant, the Potato does not degenerate. Recent discoveries have demonstrated almost beyond doubt that if Potatos are protected from these external agents they show no sign of degeneration. The agents themselves have been investigated. They are not micro-organisms of an ordinary kind. Yet, whatever their nature, the agents of degeneration are capable of being introduced into the tissues of the haulm and of spreading thence to the tubers. Once in the tuber the plants produced therefrom are assured of degeneration—some varieties may succumb sooner, some later, but all progeny from the originally attacked tuber are or may be degenerate. The signs which affected Potatos exhibit are well known. The haulm may be dwarfed, the leaves curl or roll and dry and fall, and the yield of tubers is reduced, often completely. At all events, two distinct types of degeneration exist. They differ in outward symptoms, but agree in their final disastrous effects. They may be described as Leaf-roll and Mosaic disease. Both appear to be virus diseases of the kind described above. The problem is how to mitigate their ravages. The method which has hitherto met with most success has consisted in planting Scotch seed, and this method, subject to certain limitations, insisted on by Dr. Salamon, is undoubtedly a good one. But, unfortunately, it is only in certain districts of Scotland that plants remain reasonably immune from virus diseases, and it is no less unfortunate that even though Scotch seed be relatively immune it soon shows sign of degeneration when grown in most parts of England. This well-known fact used to be explained on the ground that the drier, warmer south is uncongenial to the full development of the Potato. But according to Dr. Salamon and the other experts, this explanation, never very satisfying, must now be replaced by one both simpler and more direct. Aphis is the offender. It and other sucking insects which frequent the Potato plant carry the virus and inoculate the Potato with it. The disease is as insidious as it is disastrous. Plants which have been infected may show but little or no sign of degeneration, but tubers taken from them will exhibit it. Selection, therefore, either by picking out the best seed tubers or selecting the tubers of single and apparently healthy plants can provide no sure means of eliminating the disease. Here, then, is a problem of great magnitude. How to solve it is a question which must occupy the attention of both growers, seed raisers, and men of science. To this all important aspect of the subject we shall hope to return in the near future. In the meantime, one practical point, albeit, no doubt a minor one, may be made. Virus disease is known to affect certain common weeds, Solanum nigrum and S. Dulcamara, and possibly others. These should be eliminated wherever they occur within half-a-mile of Potato fields.

Our Supplementary Plate.—The Supplementary Plate presented with the present issue depicts the beautiful Blue Garden at Pyrford Court, Woking, the residence of Viscount and Viscountess Elveden. The Blue Garden is one of a series of colour gardens, separated from each other by suitable hedges—the golden Holly hedge that separates the Blue Garden from the Golden Garden may be seen in the picture. The handsome old Italian marble seat with lead figures marks the boundary of the latter garden, but a Grey Garden and a Scarlet Garden continue to the left of the seat with the same broad, grass walk through the centre. A description of these colour gardens, which number five, was given in *The Gardeners' Chronicle*, July 19, 1924, p. 45, and many of the plants they contain were enumerated then. It will be seen that tall, blue Delphiniums form a conspicuous feature in this Blue Garden in summer, and in the foreground of the picture is seen a fine bank of Eryngium Oliverianum with a few plants of Funkia ovata in front. Very beautiful also are such plants as Linum perenne, the blue-foliaged Thalictrum flavum, Anchusas, and the common Chicory—Cichorium Intybus, which has flowers of the most glorious blue. Bearded Irises contribute a great wealth of blossom in their flowering season, the predominant colour, of course, being blue. The genus Campanula affords a great number of blue-flowered species and blue Phloxes, Verbenas, Heliotropes, and Veronicas, with such annuals as Commelina coelestis, Phacelia coerulea, Nemophila insignis grandiflora, Myosotis, Cornflowers, Nigella damascena, Love-in-a-Mist, and Anagallis linifolia may all be worked into the scheme of planting. Those who have visited St. Fagan's Castle will remember the series of beautiful colour gardens there, and Mr. Pettigrew has utilised some of the shrubs, such as standard Ceanothus 'Gloire de Versailles and blue-flowering Clematis in his scheme, which includes a delightful effect in one part with blue Lobelia as a ground-work, above which arises Nigella damascena with a background of Aconitums and blue Sweet Peas.

English Railway Station Gardens Competition.—The highest award in the Midland Section of the London, Midland and Scottish Railway Station Gardens Competition has been gained by Charfield, Gloucestershire. This station obtained the maximum marks in each of the spring, summer, and autumn judgings, no other station having reached the maximum in any one season. Elsecar, Yorkshire, and Ockenden, Essex, were second and third respectively.

Banana Production within the Empire.—Although many people in this country associate the Banana particularly with Jamaica and the Canary Islands, not more than two-fifths of the fruit imported into the United Kingdom comes from those countries, the remaining three-fifths being supplied by Colombia, Costa Rica, and the Republic of Honduras. In 1922, Bananas were imported into the United Kingdom to the value of over £5,300,000, of which amount only about £600,000 represented produce of British Possessions. In view of the fact that the Banana can be grown in most tropical lands where labour is available, it would therefore seem advisable to consider whether a greater share in the Banana industry could not be undertaken within the Empire, more particularly in parts of West Africa, which are within a comparatively short distance of the home market. The present position of the industry in the various countries of the Empire is indicated in an article on "The Banana and its Cultivation, with special Reference to the Empire," published in the current issue of the *Bulletin of the Imperial Institute*, which also gives particulars of methods of growing the fruit and the preparation of various products, such as Banana flour, and dried Bananas or "figs." Of the British West India Islands, Jamaica is the only important Banana producing country, and last year it exported (largely to the United States) twelve-and-a-half million bunches valued at over £2,250,000, whilst in some years the exports have exceeded sixteen million bunches. Trinidad, Barbados, and Dominica formerly exported small quantities of fruit, but the trade has now almost ceased. British Honduras has an annual output of about half-a-million bunches, but British Guiana, although producing fruit of excellent flavour, has so far not built up an export trade. In Australia, considerable quantities are grown for local consumption in Queensland and New South Wales, and there is also a large import from Fiji, where Banana growing is one of the staple industries. Other parts of the Empire, such as India, Ceylon, Malaya, and East and West Africa, at present only grow the fruit for their own use.



TO THE WORSHIPFUL
THE MAYOR OF SOUTHPORT
Alderman C. Aveling, J.P.

WE the undersigned, who had the honour and pleasure of acting as Judges at THE FIRST GREAT FLORAL FÊTE held at Southport on August 27th, 28th & 29th 1924, desire respectfully to offer you and all those associated with you in this splendid enterprise our united and sincere thanks for the courtesy and kindness extended to us on this auspicious occasion.

WE also offer you and the Aldermen and Councillors of Southport our hearty congratulations on the magnificent horticultural display contributed to from all parts of the United Kingdom. In our opinion your exhibition has never been excelled by any other Floral Fête held in the provinces.

WE believe that an undertaking conceived on such generous lines and carried through with such untiring energy and thoroughness, will have a far-reaching effect for good upon British Horticulture, and will, we hope, prove of material benefit to your "Garden City" where municipal enterprise and thoroughness are evident in all directions. Your beautiful public gardens and parks filled us with admiration and gave us unbounded pleasure.

Allan Millar.
N. F. Barnes
Charles H. Curtis
F. Jordan
H. G. Alexander.
John I. Cypher
Thomas H. Cook.
Ben Ashton
James Gibson
Clarence Elliott
John Wood
Andrew Ireland
J. S. Brunton
James Jeffrey.
John S. Eckford
Charles H. Cook
Geo. E. Leyland
Arthur E. Perkins
Wm. Allison
H. W. Whiteley
James Stewart
R. Forester Felton F.R.H.S.
A. H. Holmes,
James Charles Allgrove
Jas. E. Hathaway
H. J. Pritchard.
Jas Gibbins
William Clark
J. Hathaway
H. E. Tye, F.R.H.S.
William Boyd
Henry Ball F.L.S.
Edward Winsor

FIG. 126.—THE SIGNED ADDRESS (MUCH REDUCED) PRESENTED BY THE JUDGES OF THE SOUTHPORT FLORAL FÊTE TO ALDERMAN C. AVELING, J.P.

Southport Floral Fête.—The congratulatory address which is being presented to Alderman C. Aveling, who was Mayor of Southport during the past year, is, we believe, a unique document. It contains the signatures of all the judges who acted at the wonderful first-time exhibition held at Southport on August 27, 28, and 29 last, and emphasises the high quality of the display and the excellent good feeling which prevailed between the Mayor and Corporation and exhibitors, but especially between the special Flower Show Committee and those who acted as judges. We have pleasure in reproducing the address and signatures (Fig. 126) in reduced form, as it serves to mark a new, important and distinct movement in the horticultural world.

Agricultural Research and Plant Breeding in Scotland.—In connection with the additional grant of £50,000 for agricultural education and research, the Directors of the Scottish Chamber of Agriculture have decided to recommend that an additional grant of a substantial amount should be given to the Plant Breeding Station and the Diseases of Animals Research Association, whose activities are somewhat restricted by the lack of funds.

A New Danger from Poison Sprays.—We are constantly reminding our readers when using poisonous washes and sprays to exercise great care in preventing animals from being injured or killed through having access to them. A case is reported in the press of poisoning resulting from the drinking of cider inadvertently stored in a barrel that was formerly used to hold poisonous spray-fluid used by a farmer in his orchard. Certain chemicals employed in the composition of washes are very dangerous, and these poisonous specifics should always be under the supervision of some competent person.

The Potato Crop.—The forecast of the average yield per acre of Potatos, issued by the Ministry of Agriculture, gives the yield at 5·8 tons, as compared with ten years' average of 6·2 tons. Late Blight disease has spoiled much of the crop in many parts of the country.

Appointments for the Ensuing Week.—Tuesday, November 25: Seventy-ninth Anniversary Festival Dinner, Gardeners' Royal Benevolent Institution, Guildhall, London, E.C., when H.R.H. the Prince of Wales, K.G., will preside; Newcastle and District Horticultural Society's lecture. Wednesday, November 26: Morley and District Paxton Society's meeting; Wimbledon Gardeners' Mutual Improvement Society's meeting. Thursday, November 27: Royal Botanic Society's meeting.

"Gardeners' Chronicle" Seventy-five Years ago.—*Calla aethiopica.* Here, in our fragery (a ditch so called), this plant thrives amazingly under the most primitive mode of culture. Indeed, the only secret connected with its most satisfactory growth seems confined to the protection of its root from frost. The water in which it grows may be sheeted over for any ordinary length of time with ice of any reasonable thickness, so that it does not actually reach the root; moreover, it seems equally indifferent about the quality of the water, or description of soil in which it is located. Some twenty years ago I had four roots planted amongst some other aquatics in the above-named ditch, with about eighteen inches of water, supplied from an artesian bore, in one end of which the mud was at least a foot deep: in this two of the roots were planted. The other end was bare gravel, so much so that we had to put stones upon the two other plants, by way of anchor, to keep them from drifting till they made a few roots to hold themselves to the bottom. Three of them are now large masses (the fourth was killed the first severe winter after planting, the water not being deep enough, about eight inches, to keep the frost from the root), and grow and flower equally free on the gravel and on the mud; and a splendid appearance they have from five to six weeks every May and June, having from sixteen to twenty flowers on each plant. Since first planted they have been two or three times cut down to the surface of the water (foliage as well as flowers), at the end of April or beginning of May, by frost, but without receiving a permanent injury. By the end of July they had completely covered their elegant leaves; and although the second crop of flowers was neither so large nor so plentiful as those cut off, still they made a very tolerable show in the August and September following, and contrasted finely with the very different habit of some yellow and white Water Lilies, their neighbours; indeed, I think it might be worth while to cut one of the plants down every spring for the sake of the autumn flowers. *Richardia, Gardeners' Chronicle, November 24, 1849.*

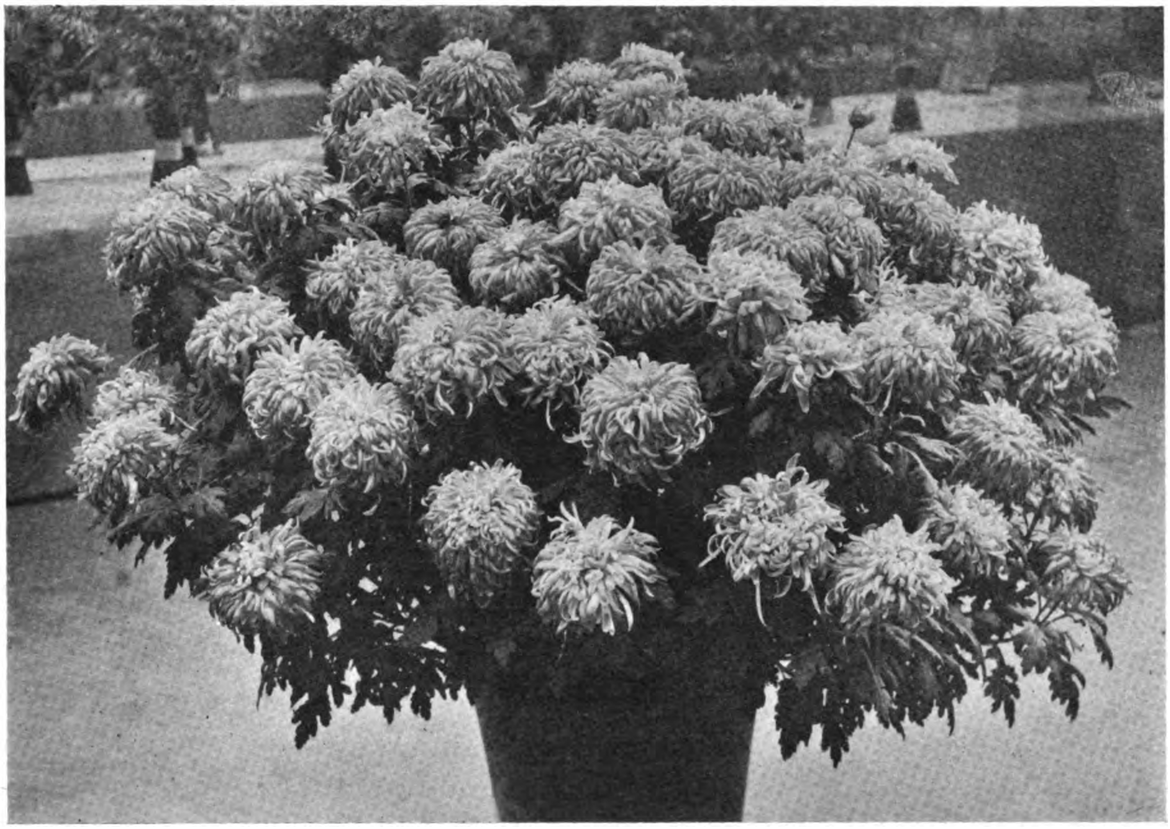


FIG. 127.—ONE OF THE FINE SPECIMEN PLANTS OF CHRYSANTHEMUM MRS. R. LUXFORD;

Exhibited at the National Chrysanthemum Society's Show on November 6 and 7, by Mrs. Joy (gr. Mr. F. J. Bright), Bentley, Hants (see p. 342.)

ORCHID NOTES AND GLEANINGS.

CATTLEYA DOWIANA ROSITA.

The presence of this remarkable form of Cattleya Dowiana in the group staged at the Royal Horticultural Society's meeting by Messrs. Stuart Low and Co., Jarvisbrook, Sussex, on November 4, elicited from some Orchidists remarks as to its relation to C. Hardyana imported with the C. Dowiana aurea type from a widely separated region.

It may be of interest to readers to give the facts about the Rosita form. It was discovered by the late Richard Pfau, of San Jose, Costa Rica, as a single specimen growing among typical C. Dowiana, and, although he visited the known habitats of C. Dowiana he never found another specimen, or C. Warscewiczii, or any other species which would account for the variety Rosita, which he cultivated in his own garden, and increased to over a dozen plants. He always regarded it as a mystery plant which might be a seedling reversion to some lost ancestral species of the Dowiana class and he named it C. Rosita; the only suggestion he could give of possible hybridity between C. Dowiana and any species growing in the same locality was with C. Bowringiana, which he did not consider probable. About 1896 he sent a small box containing the plants, which were weak specimens and travelled badly, to Messrs. Stevens, King Street, Covent Garden, to dispose of, and they realised very low prices in consequence of their poor condition. Messrs. Charlesworth and Mons. Maron acquired a few and the latter showed it in good form at the Royal Horticultural Society's meeting on December 18, 1900, when it received a First-Class Certificate.

The report of the award in *Gard. Chron.*, December 22, 1900, gives the main facts of its direct introduction from Costa Rica, and a brief description which agrees with the plant shown by Messrs. Low.

The plant varies considerably in proportion to good or indifferent cultivation; in its mauve-tinted, silver-white petals and gold-veined, claret-crimson lip, it differs from any other form of Hardyana and when used for crossing gives distinct features.

CATTLEYA MRS. GRATRIX.

This white Cattleya (C. intertexta Juliettae × C. Lady Veitch), which was shown by Leonard Dixon, Esq., Pitlochrie, St. Albans, at the Royal Horticultural Society's meeting on November 4, is a fine hybrid, and when well established will rank with the best white forms. It first flowered in 1923 with the raisers, Messrs. Sanders.

The flowers are of fine shape, clear white with pale yellow in the middle of the lip, the firm substance and broad petals showing the influence of C. Warneri alba. There are many white Cattleyas in the large-flowered section which resemble each other generally, but every different cross brings variation in habit and time of flowering, and all forms are favourites with lovers of Orchids.

LAELIO-CATTLEYA BRILLIANT.

A fine flower of Messrs. Sanders' 1921 novelty, Laelio-Cattleya Brilliant (L.-C. Black Prince × C. Iris) is sent us by Mr. Sorrell. The sepals and petals are bright mauve-purple, the front of the lip being ruby-crimson. As in most others where C. bicolor is a primary parent, it is interesting to observe how the short side lobes of the lip and fleshy white column of that species is shown in the progeny.

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Coelogyne.—The useful Coelogyne cristata is nearing the completion of its season's growths. From now onwards until the flowering stage is past the rooting material should be kept just moist enough to preserve the pseudo-bulbs in a plump condition. The plants should be given all the light and air possible, and be grown in a cool intermediate temperature. Any plants that have been re-potted or broken up and made into specimens this year should not be allowed to flower before another season, thus giving them time to become re-established and to develop strongly. C. barbata is a very pretty and distinct species that blooms during the winter. This plant should never be allowed to become quite dry at the roots until after the flowering season is past, when the supply of moisture should be reduced and the plant given a season of rest in a cool, intermediate atmosphere. C. ocellata is another member of this genus that flowers in the winter and succeeds well when afforded similar treatment to that recommended for C. barbata.

Lycaste.—Lycaste Skinneri will now be fast finishing its season's growth and flowers will be seen pushing from the bases of the new pseudo-bulbs. While growing, these plants require a liberal supply of water at the roots, but at this particular season they should be kept somewhat drier, but enough moisture should be afforded them at all times to prevent them from shrivelling. The little check they receive will cause them to send up their flowers more regularly instead of two or three at a time, which frequently occurs. These plants thrive in a cool-house temperature that does not fall below fifty degrees.

Odontoglossum.—Plants of O. citrosmum that are finishing their season's growth should be suspended or staged near to the roof-glass in a house having an intermediate temperature. The supply of water at the roots should be reduced gradually, until after the new pseudo-bulbs are thoroughly developed, when moisture should be withheld for longer periods, giving only sufficient water to keep them rigid. This treatment should be continued through the winter and until the flower spikes are seen to be pushing from the centre of the young growths in the spring. O. grande and O. Schlieperianum that have passed out of bloom should be placed on a shelf or near to the roof-glass in a cool house and rested. O. Insleayi and its variety leopardinum are producing their flower spikes and should be supplied with water liberally until after the flowers fade, when they should be rested.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Fruiting Trees and Shrubs.—In planting schemes now being carried out, the decorative value of fruiting trees and shrubs during the early winter months should not be overlooked in the arrangement of the shrubbery. Many of our most striking and beautiful ornamental fruiting trees belong to the Natural Order Rosaceae. Of the Crabs, probably the most showy are John Downie, the Dartmouth, and the Siberian. Pyrus Aucuparia, the Mountain Ash, is also of great value for winter colour, but it should be given ample room for development. Cotoneasters are very decorative when carrying their multitude of red berries. C. Simonsii and C. frigida make fairly big bushes, while the low-growing C. horizontalis and C. microphylla are most attractive for positions near paths. Crataegus Crus-galli bears handsome, dark-red berries, and C. coccinea is also well worth growing for its fruits, while for covering walls and buildings nothing can surpass in beauty Pyracantha coccinea Lalandei, which seldom fails to carry a full crop of fruits of a very bright colour. The rich, wine-coloured berries of Viburnum Opulus, freely produced on old plants, are quite attractive, while the snow-white berries of Symphoricarpus racemosus add variety to the scheme. The Barberries are plants of outstanding merit for autumn and winter fruit display, and the fruiting properties of some of the varieties of recent introduction are very remarkable. These alone, grouped in large masses, as is done in the Royal Horticultural Society Gardens at Wisley, produce a most striking and highly-decorative effect.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Solomon's Seal.—Plants of Polygonatum multiflorum may be lifted from the open and potted in seven-inch pots for early spring-flowering.

Greenhouse Rhododendrons and Azalea indica.—In my notes in the issue for May 24 I advocated the top-dressing and overhauling of these plants after flowering, recommending the general potting to take place in the autumn. If this has not been done the work should be completed forthwith. A compost, consisting of three parts peat to one of fibrous loam (lime tree) with plenty of sharp sand and some broken charcoal, should be used. The pots, which should be scrubbed scrupulously clean and be perfectly dry at the time of potting, require to be very carefully crocked, and some of the rougher part of the compost from which the fine particles have been sifted out should be placed over the crocks to ensure good and lasting drainage. Remove, with a pointed stick, as much of the old soil as can be safely dispensed with without causing undue root disturbance. Re-pot the plants in receptacles of a size that will just permit of the working of the potting-stick around the old ball. Pot firmly, just covering the old ball with the new soil.

Cyclamens.—The flower-buds of these plants are now being produced very freely, and, except in the case of weak or backward plants, there should be no further necessity to prevent the development of the flowers, for, given good treatment, the plants should continue to bloom for the next four or five months. An occasional watering with weak liquid-manure and soot-water will be beneficial. A little Clay's fertilizer or other suitable plant food may be applied once in three or four weeks, taking care that no water obtains a lodgement in the crowns of the corms. All spent flowers should be removed regularly, detaching them by means of a sharp pull and not by cutting with a knife. A temperature of 50° to 55°, with a little air on all favourable occasions, should be maintained. Seedlings raised from seeds sown in pans last August should be pricked out into other well-drained pans, using a compost of one part sifted fibrous loam and one part good Oak leaf-mould, with some sharp sand and broken charcoal added. Place the pans containing the young plants on a shelf near the roof-glass in a temperature of 55° to 60°, where they should be kept growing throughout the winter.

Camellias.—Before these plants come into flower they should be given a thorough cleansing; in the case of large plants which may be growing on walls or are planted in beds in the corridor, the garden engine will be useful as a means of applying an insecticide previous to the hand-sponging of the leaves. Where flower buds have set very freely it will be well to disbud rigorously. Take care that the plants do not become excessively dry at the roots at this season or bud-dropping will result.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Raspberries.—Where it is desired to make fresh plantations of Raspberries the canes should now be planted in ground that has been well trenched and manured. Although the Raspberry is a surface-rooting plant, the ground should be deeply dug to facilitate good drainage, especially as the plants will remain for some few years without the ground being again disturbed. Plenty of well-rotted manure should be incorporated with the soil. Plant in rows five feet apart and allow a space of one foot between each cane. Place stout poles at intervals along the rows to carry wires on which to tie the canes. After planting is finished make each clump of canes secure to a wire, which will be sufficient for the first season, as the canes will need to be cut down to within four or five inches of the ground in the spring. It is the resultant growth next summer which will need to be fastened to each wire, as these will provide the fruit in the following season. It will be well to give the rows a light mulch of half-decayed manure to keep the roots moist and also protect them from severe frosts. Good varieties are Lloyd George, The Devon, and Pyne's Royal.

Small Fruits.—Any time before the New Year, provided the weather is open, will be suitable for making new plantations of Gooseberries, Red Currants and Black Currants. These, also, should be planted in well manured, deeply-dug ground, and they will last long in a free-bearing condition. The soil should be prepared some time before planting in order to allow time for it to settle. Plant the bushes in rows six feet apart, and five feet between each bush in the row. This will allow plenty of room for pruning, gathering the fruit, etc. Gooseberries and Red Currants should be grown in an open, sunny position, but Black Currants are more partial to shade, provided they are not grown under trees. The roots should be slightly pruned before planting. Tread the roots firmly in the soil, but on no account plant when the ground is wet and sticky. If the soil is of a clayey nature, some old soil from the potting-shed should be mixed with it. This will help to give the roots a good start and encourage the formation of strong, healthy, fruiting wood.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

The Early Peach House.—If ripe fruit is required early in the season from trees planted out in borders, the trees should receive their final pruning and the house be cleansed. Very little pruning should be necessary beyond taking out surplus, weakly shoots and any not considered necessary for furnishing the trees. Even where the trees have appeared to be free from insect pests, it will be wise to wash them twice with an insecticide before tying the young shoots in position. Red spider and green and black aphides are probably the worst pests of the Peach; with ordinary care aphides may be kept in check by careful attention to cultural details, such as damping and syringing, but when red spider has been troublesome, repeated washings at intervals with a soapy insecticide or Gishurst compound will be necessary. Trees free from insect pests pave the way to success. The structure should be cleansed thoroughly with strong, hot, soapy water, and the walls treated with newly-slaked lime, care being taken to fill all likely crevices that make harbours for insect pests. With the cleansing of the structure completed the work of tying the young growths should be carried out forthwith, care being taken not to overcrowd the young wood, as this entails much work, not only at this stage but during the growing season. The borders will also require attention, as with every possible care taken in carrying out the above work, the soil will become too consolidated, therefore the surface should be carefully pricked over with a fork and all loose soil removed after which the borders should be examined, and if found to be dry they should be moistened thoroughly with luke-warm water. The house should be well ventilated for several days, when the borders may be top-dressed with a mixture of fresh loam, bone meal, and wood ash, with plenty of lime rubble added, the last being essential for stone fruits. If Chrysanthemums have been grown in the house it will be wise to open the ventilators day and night for a fortnight or more before closing the house in view of starting the trees into growth.

Late Peach House.—No time should be lost, now that all fruits have been gathered, in pruning the trees of the wood which carried this season's crop, as it is of no further value. By doing this light and air will circulate freely about the shoots that remain and ripen them. Keep the borders in a moist condition and ventilate the house freely.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Potatos in Store.—During wet weather, when outdoor work is at a standstill, the Potatos in store should be examined. Even when every precaution is taken the wastage during the winter is considerable, and we may expect much loss of this year's crop, as certain of the varieties were very badly diseased when lifted; some varieties rotted in the ground through the excessive rains. One cause of Potatos not keeping well is storing them when they are wet.

Onions.—The bulbs are now well-ripened and may be removed to the store-room. They will keep well if tied together in ropes and hung from the roof-rafters. Examine every bunch and remove any bulbs that show signs of deteriorating, for present use. Hang the Onions where plenty of air will circulate about them, and keep the place dry, as Onions soon deteriorate when damp.

Autumn-Sown Onions.—This crop should receive attention. Remove weeds growing between the plants and, if short litter is available, apply a light mulch of this material along the rows.

Carrots.—Any Carrots still in the ground should be lifted, cleaned and stored in sand. Roots of the late-sown crop are much superior to those sown earlier, which were badly eaten by grubs.

Mushrooms.—Collect horse-droppings in a dry shed and turn them every other day, until sufficient have been procured to form a bed. Beds in bearing will need close attention in watering; the water should be warmed to the temperature of the house. Damp the walls and floor with the syringe. As soon as the Mushrooms are of a medium size they should be cut or twisted off.

Winter Greens.—Every opportunity should be taken to remove all decayed leaves from Brassicas. This will allow the plants more light and air and keep them in better health. If the leaves cannot be reached by the hand, use a long stick and pull them out. Weeds should be removed by hand.

ALPINE GARDEN.

KIRENGESHOMA PALMATA.

The difficulties some gardeners experience in the cultivation of plants must be as much a source of wonderment to those who regard such plants as easy to manage as weeds, as is the ease with which "miffy" species are sometimes managed by happy-go-lucky folk. But that Kirengeshoma palmata, which puzzled your contributor *R.* (p. 223) for so long, should ever come to be regarded either as a rare alpine or as presenting any difficulty to a cultivator, passes the bounds of comprehension.

Your correspondent, however, had the plant in a poor situation, and that would account for its poor showing, for like most other plants, most animals and human beings, Kirengeshoma needs proper conditions if it is to flourish. Planted in thin, sandy or clay soil, the species will do well enough in a wet summer. It is in no sense a xerophyte, however, and after a fortnight of hot, rainless weather in such situations, it sends out signals of distress, clearly telling the gardener what is amiss. The better the soil the better the plant bears a drought, and provided its roots can get to moisture when needed, Kirengeshoma palmata (Fig. 128) will flourish equally well, so far as growth is concerned, in shade or sun.

The flowers are rather less irritatingly coy in sun than in shade. Your correspondent advises that when a suitable site has been found it, the plant should not be disturbed unless the clump becomes too large. The writer's experience is that when fairly cultivated, the species may be moved annually and chopped up unmercifully. A useful size of clump for replanting is one with six "canes," and if comfortable about its roots, such a clump will double itself in a season. The plants on which Farrer based his cultural prescription were growing in equal parts of loam, leaf-mould, and grit, over a subterranean water pipe. Curiously enough, they were children of the plant at Kew which, *pace* your correspondent, seems to have taken much longer to "find itself" than did its progeny. *Amateur.*

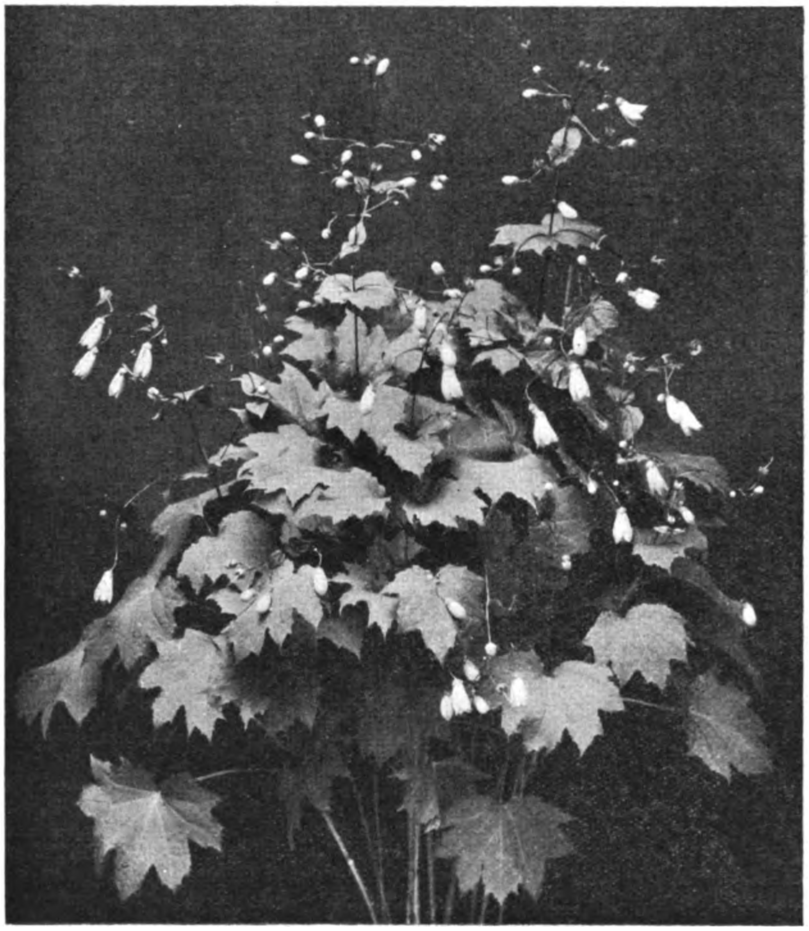


FIG. 128.—KIRENGESHOMA PALMATA.

TUNICA SAXIFRAGA.

Tunica Saxifraga has lasted a long time in flower this season, and on Nov. 6 I observed that it is still in flower, bearing on its slender, trailing branches the pretty little white or lilac star-like flowers. It is always valued because of its autumnal blooming, and is one of the comparatively few non-bulbous plants we can rely upon for the rock garden in late autumn. It is by no means a showy plant, but it is a charming one, graceful both in foliage and flower and quite in keeping with the best of other rock garden plants of the season.

The double variety finds acceptance with a goodly number, but the single lilac and the white forms are so easily raised from seeds and give so much satisfaction that those who do not specially desire the less common plants will be quite satisfied with either. Apart from the double variety there appear as yet to be no special forms of T. Saxifraga in cultivation, but probably some day one will make its appearance.

The plant may be grown in ordinary loam or in any soil suited to the majority of rock plants. It thrives in sun or partial shade and is thoroughly hardy. The seeds should be sown in spring, preferably in pots under glass. *S. Arnott.*

A FEW FLOWERING AND FOLIAGE PLANTS FOR A NORTH ASPECT.

The subjects enumerated below may be selected for planting in positions facing north, where few other plants will thrive. They include Ampelopsis muralis, a self-clinging Virginian Creeper with deeply serrated foliage that assumes intense autumn colourations, also A. Roylei, a bold, green-foliaged species and a strong grower, that will clothe a wall space very rapidly.

Ercilla volubilis (syn. Bridgesia spicata) is a hardy evergreen creeper with stalked, alternative, entire, sub-coriaceous leaves that adhere to walls like Ivy. The flowers are purplish and produced in dense, sessile racemes.

Choisya ternata will succeed in a north aspect; the foliage of this shrub is shining green and the pure white flowers are sweetly scented.

Cotoneaster microphylla and C. Simonsii, with their autumn crop of beautiful crimson berries, are subjects of great beauty and both are suitable for planting in north aspects. Crataegus Lalandei vies with the last in its berried decoration. Hedera dentata aurea, H. palmata, H. Crippsii, and H. caenwoodiana are four useful Ivies for covering north walls.

Euonymus elegantissima, with bold variegation on its foliage, provides a great contrast to the other plants. Tropaeolum speciosum also succeeds on a north aspect, but the stems die down in the winter.

A well-drained border of sweet compost is all that these plants require in the matter of a rooting medium. *G. L.*

THE WILD GARDEN.

The modern wild garden may be made a most attractive feature if due consideration is given to arrangement and planting, and it provides a home for a large number of plants, many of which do equally well in the woodland as in the borders of the dressed garden.

The ideal wild garden naturally changes in appearance according to environment. On light soils it will probably be woodland in character, and Heaths, Brooms, Kalmias, Pernettyas, Azaleas, and Rhododendrons will be found in association with Scotch Pine and Silver Birch. On heavier, alluvial soils, shrubby and herbaceous Spiraeas, Gunneras, Heracleums, Rheums, the tall-growing Polygonums, and other plants largely valuable for ample foliage will luxuriate and produce beautiful, natural effects. Where the land is naturally undulating the environment and conditions will change to some extent in the same area, the higher portions being light and dry while the lower portions may be considerably heavier and moist; where the grower has the additional advantage of a stream running through the site the scope for establishing various colonies of interesting plants is greatly widened.

In the higher positions many species of Cytisus and Genista, which flourish in comparatively poor soils, will make prominent features in the early summer. In similar positions the Lupins, both the Tree and herbaceous types, will succeed, as also will those beautiful flowers the Mallows.

The slopes of woodland valleys offer ideal positions for deciduous Azaleas, as moisture is supplied from the higher land above and the positions are usually sheltered. There is much to be said in favour of shelter for Azaleas, although the plants are perfectly hardy. They like a cool rooting-medium, and this is easier obtained under sheltered conditions. It is of great advantage also in the spring when the plants are about to flower, as it sometimes happens that a single late frost will destroy the opening flowers in an entirely exposed position, whereas a very little shelter prevents this loss. Under similar conditions the Japanese Maple flourishes and if groups of this plant have a background of Silver Birch the light foliage of these appear to itensify the colour of the Maples. The modern hybrid Rhododendrons seem hardly suitable for the wild garden proper though they are ideal subjects for mass planting on the outskirts, but the old R. ponticum is admirable for the woodland, where its purplish flowers tone perfectly with the surroundings.

In the semi-shaded glades of the woodland many species of Lilium may be profitably planted, such as L. giganteum, L. auratum, L. speciosum, L. pardalinum, L. tigrinum, and L. regale. Near the paths space should be found for many of the low-growing plants such as Primroses, Cowslips, Violets, Hardy Cyclamen, Dog's Tooth Violet, Triteleias, etc., as also for the naturalisation of a host of small bulbous plants.

In the vicinity of the stream admirable conditions may be found for moisture-loving Primulas, such as P. Bulleyana, P. Beesiana, P. japonica, P. pulverulenta, P. sikkimensis, P. latifolia, and P. rosea, while if space permits groups of Iris sibirica and I. Kaempferi will make attractive patches of colour in their season. The paths in a wild garden should resolve themselves rather into tramped tracks in the wooded parts or quite informal grass vistas in the more open positions. *W. Auton.*

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

STOCKS.

On account of their delicious fragrance Stocks are very popular flowers, largely grown for market sale, yet they are not so commonly cultivated in private establishments as one would expect, this being probably due to the fact that their successful cultivation is somewhat uncertain. Unless a good strain of seed is obtained from a reliable source the percentage of single flowers is too often unduly large.

Seeds should be sown about the middle of June, and the resulting plants should flower about Christmas, using for this purpose Beauty of Nice and many other fine varieties generally known as "Beauty Stocks." Others suitable for this purpose are All-the-Year-Round, Empress Elizabeth and Riviera Market.

In the immediate neighbourhood of London and other large towns, it is hardly worth while to try to flower them so early, as lack of light and occurrence of fogs render their successful flowering uncertain. In such situations they are best sown during September and flowered the following spring. All the "Ten-Week" varieties may be used for this purpose: Princess Alice, a fine white variety, has for many years been a favourite variety for growing in pots. The intermediate varieties, which include the East Lothian type, may be used for this purpose, sowing them during August.

The seeds should be sown very thinly in shallow boxes or pans in a cold frame; thin sowing is very important, for if the seedlings are in the least crowded, they are very liable to damp off. When large enough they should be pricked off into boxes and in a few weeks they should be ready for transferring to small pots. The taller-growing and intermediate varieties should be grown singly in pots, receptacles six inches in diameter being suitable for large plants. In dealing with the more slender "Ten-Week" and smaller-growing varieties, three plants may be placed in a 48-sized pot and four or five in a six-inch pot. The potting compost should consist of good medium loam, with sufficient sand or old mortar rubble to render it porous. As firm, sturdy growth is essential, leaf-mould should not be used in the soil unless the loam is very heavy. If mortar rubble is not used, a dusting of lime should be added, as Stocks are lime lovers.

Firm potting is important to ensure success. The plants may be grown in cold frames during the winter, but a position near the roof-glass in a cool, airy house affords ideal conditions for the plants. They should be exposed to plenty of fresh air on all favourable occasions, for any attempt at coddling them will end in failure; as also will excess of water at the roots. During the dull season they should be kept on the dry side, giving water when necessary early in the day, so that excess of moisture may dry up before night. There should be no attempt at feeding them during the winter, but during spring, with better weather conditions, and their pots full of roots, the plants may be given weak liquid-manure, until they come into flower. *J. Coutts.*

INDOOR PLANTS.

DECORATIVE PLANTS FOR CHRISTMAS.

Gardeners should make provision for having suitable plants to make the conservatory and mansion bright and gay during the Christmas season. The conservatory or other structure should be made perfectly clean before the flowering plants are placed in it. Should the conservatory be attached to the dwelling-house every care should be taken to make it as attractive as possible and the plants arranged as much in a colour sheme as possible. If the conservatory or winter garden is to be used by guests care must be taken to keep it at an even temperature, say from 60° to 70°. Plants suitable for making an attractive display are Chrysanthemums in variety; Euphorbia (Poinsettia) pulcherrima and its white variety alba; Euphorbia jacquiniaeflora, a beautiful plant with long wreaths of orange-scarlet bracts; Lilium speciosum album, and L. longiflorum giganteum; Richardia africana, Spiraeas in variety, Carnations in variety, Bouvardias in different shades of colour, Begonias Gloire de Lorraine, B. Turnford Hall, blush white; B. Gloire de Sceaux, which has leaves with a bronzy metallic lustre, crimson beneath, and bright rose-pink flowers; the winter-flowering B. Optima, B. Mrs. Heal, B. Elatior, B. Fascination, and many others; Azaleas in variety, Cyclamens, which are beautiful both of foliage and flower; Erica hyemalis, E. hyemalis alba, E. gracilis autumnalis, and other Heaths; Freesia refracta alba, Roman Hyacinths, which are very free-flowering; Primulas in variety, Lily-of-the-Valley and Marguerites. Solanum hybridum should be included for its brilliant red berries.

Of foliage plants we may select Araucaria excelsa, with pale green foliage; Aralia japonica, which has large, green, palmate leaves; Aspidistra lurida variegata, Asparagus plumosus, A. Sprengeri, a plant suitable for growing in hanging baskets; Crotons, Dracaenas, Ferns, including Adiantums, Davallias, Nephrolepis, many of which are suitable for growing in baskets; Aspleniums, Cyrtomium, Lastrea, Lomaria gibba and Pteris in variety; Ficus elastica, the India-rubber plant; Grevilleas, with Palms innumerable, from the slender Geonoma gracilis and Cocas Weddelliana to the stately Kentia Belmoreana and K. Forsteriana. Many light and graceful Palms may be grown in small pots suitable for small vases for dinner table decoration or rooms, and the best Palms for cultivating in small pots are Cocos Weddelliana, Geonoma gracilis, Kentia Belmoreana, and K. Forsterjana. Phoenix Roebelinii withstands the atmosphere of rooms wonderfully well and is of very compact habit. Cocos flexuosa is a graceful, tall-growing Palm invaluable for decoration. Amongst the hardier Palms are Latania borbonica, Phoenix canariensis, Corypha australis, Chamaerops excelsa, and C. humilis.

In a large number of establishments the gardener has not the convenience or the oportunity to cultivate choice plants for Christmas and the New Year, but he can procure any he may select from market growers. *John Heal, V.M.H.*

PYCNOSTACHYS DAWEI.

This plant, whether propagated from seeds or cuttings, responds readily to generous treatment. Robust plants, adorned with Delphinium-blue flowers, are admirably suited for grouping in the conservatory or greenhouse,

The cultural requirements of the plant present no difficulties, it being easy to obtain excellent specimens for winter flowering. They grow well in an ordinary compost, loam forming the staple material, adding crushed potsherds and coarse sand to render the mixture porous.

A few seasons ago I was disturbed by the tips and edges of the leaves of my plants having a burnt, or scalded appearance, and losing their bottom leaves, yet the flowering was not affected, although the injury detracted from the appearance of what was otherwise excellent foliage; the potting soil in this instance was deficient in lime.

During the past two seasons I have grown Pycnostachys Dawei in calcareous loam; the ill effect, happily, has not been evident. I find this plant benefits by being stood out-of-doors on an ash base during the midsummer months. *F. Gooch, Bossington Gardens, Houghton, Stockbridge, Hants.*

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

It does not require a long apprenticeship in gardening to render one sceptical about the superior merit of "novelties," and the longer one practices the craft the less liable he becomes to seduction. Still, it is well to keep a look-out for unfamiliar shrubs and herbs, and I reckon it lucky that in prowling through Messrs. Cunningham and Fraser's nursery at Comely Bank, Edinburgh, not long ago, I caught sight of the pale sulphur corymbs and silvery foliage of a little Milfoil. Stooping to read the label I found that, although only some eight inches high, it had been assigned the sonorous title Achillea King Edward. Whether it be a novelty in the trade sense or not it was new to me, and has proved itself a very choice little herb. Beginning to flower at mid-summer, it still carried some fresh bloom on this November 11, though we had five degrees of frost on the night of the 3rd.

Howbeit, for continuous flowering over a long period, two plants here excel all others. One is a shrub, Abutilon megapotamicum, which, trained against a south wall never stints its array of quaint blossoms, like little dolls with scarlet mantles, yellow petticoats, and chocolate shoes, between mid-summer and the first severe frost. It is to be regretted that under the rule of priority this brilliant bush has been bereft of the name by which one used to know it—A. vexillarium—the standard bearer, and has been loaded with the cumbrous title megapotamicum, signifying its native dwelling on one of the five South American rivers called Rio Grande.

The other persistent flowerer is a herb—Geum Borisii—a hybrid raised in the gardens of Ferdinand, late Tsar of Bulgaria, between G. bulgaricum and, I think, G. montanum, and named after his son and successor, Boris III. Even now, within six weeks of Christmas, there are plenty of bright orange-red flowers, held on stiff stems over the handsome leaves of the plants. It has none of the sprawling, loose-limbed habit that spoils some of its kindred, and in my opinion it is by far the handsomest of the genus.

Enough leaves have been shed in the woodland to cause one to esteem those trees which delay unrobing longest. Zelkova crenata is still in full foliage, but that foliage is now clear, bright yellow. Z. acuminata is later to change, and assumes a more tawny tint than the other. The fringe tree —Chionanthus virginica—seems loth to part with its verdure; but it also turns a good pale yellow before falling asleep. The great leaves of the Himalayan Whitebeam—Pyrus vestita—which seldom unfold before June, atone for their tardiness in remaining green with snowy backs till many of their neighbours are bare, and then, if spared by frost, become golden and russet before they fall.

Conspicuous among autumnal tints is the lively green of Turner's Oak—Quercus Turneri —a shapely tree of moderate stature, said to be the offspring of Q. Ilex and Q. pedunculata, but never attaining the stature of either of its reputed parents. Planters would do well to make more frequent use of this pretty tree, for its foliage retains its refreshing hue till it has to surrender to the imperious winds of winter.

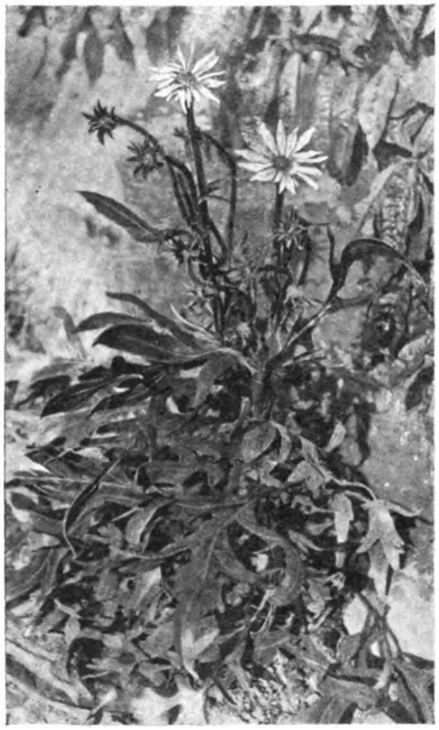


FIG. 129.—SILPHIUM ALBIFLORUM.

In those gardens where the Foxglove springs self-sown, the yellow-flowering perennial species Digitalis ambigua should be planted, not because of its beauty, for it is inferior to our native biennial, both in stature and display, though it is a graceful herb, but because of the result of cross-ferlilisation of the two species by bees. Although the white and Gloxinia-flowered varieties of the common Foxglove are, as a rule, the only forms allowed to remain in the borders, yet the hybrid forms that occur always show rose-colour blended with the yellow of the perennial parent. The offspring is an extremely pretty flower, not much, if at all, taller than D. ambigua, the blossoms being a blend of pale yellow, apricot, and rose. Here they occur only as chance seedlings, biennial like D. purpurea, and infertile. But it might be worth the while of a clever florist to raise a fine race by crossing the two species systematically. *Herbert Maxwell, Monreith.*

NOTES FROM GLASNEVIN.

SILPHIUM ALBIFLORUM.

The Silphiums form a well-marked genus of the vast Natural Order Compositae. They are all American plants, characterised by their usually tall stature, yellow ray florets, and thick, foliaceous, involucral bracts. To the general colour of the ray flowers the subject of this note (Fig. 129) forms an exception, for in this case they are white; the plant, too, is not so tall as the better-known, yellow-flowered species, and is somewhat less hardy. Asa Gray, in the *Flora of North America*, describes it as "a foot to barely a yard high"; here, grown at the base of a sunny wall, it approximates the latter height. The leaves are over a foot long with a petiole four to five inches long, and these are deeply divided into long, narrow segments after the manner of the better known S. laciniatum (*Bot. Mag.*, t. 6534); the upper leaves are sessile, entire, one inch to one-and-a-half inch broad, tapering to an acute point. The flower heads are two-and-a-half inches across, with white ray florets surrounded by the imbricated, green bracts of the involucre, the lowest series being the longest, broad at the base and tapering to a sharp, recurved point. The whole plant is sparsely scabrid.

A native of North and West Texas the plant probably requires rather more sun than it usually gets here. Growth is late in commencing in spring, consequently the flowers commenced to open so late as October 20. In a milder district and with a more ample supply of water during summer it is possible S. albiflorum is capable of making a better display. The figure in the *Botanical Magazine* (t. 6918) shows a much better development of the flowers than we ever have at Glasnevin.

COLQUHOUNIA COCCINEA.

Grown against a sunny wall this interesting plant is hardy at Glasnevin and for some years past has flowered fairly freely in September and October. It is now about nine feet in height, the main shoots being secured to the wall, and from these young shoots are produced in spring, the flowers appearing on them in autumn. The shoots of the previous summer are occasionally killed back by frost, but as they are pruned hard every spring in any case no harm is done, as the old shoots attached to the wall are not injured. The plant at Glasnevin has been called hitherto C. vestita, but the figure in Wallich's *Plantae Asiaticae rariores*, Volume 3., t. 267, shows that species as having a pink corolla, with leaves relatively shorter and broader. C. coccinea is figured in the *Bot. Mag.*, t. 4514, both figure and description agreeing closely with our plant.

The young shoots are bluntly four-angled, densely furnished with a close, yellowish-white tomentum; leaves opposite, petioles from one-and-a-half inches to two inches long, also downy; leaf blades, five inches to six inches long, two-and-a-half inches wide, toothed on the margins, densely woolly below, almost glabrous above, except on the mid-rib, which is woolly, particularly towards the base. Flowers axillary, towards the apex of the shoot, in clusters of six and seven, each flower on a very short pedicel; on some shoots the flowers are also terminal. The calyx is half-an-inch long, finely toothed and densely woolly. Corolla twice as long, downy, dilated beyond the calyx, two-lipped, the upper notched, the lower three-lobed; colour bright orange red. The colour of the corolla in the Glasnevin plant is much richer than shown in the *Bot. Mag.* figure, but this is not important botanically though of value horticulturally.

Sir J. D. Hooker, in the *Flora of British India*, Vol. 4, p. 674, declared himself quite unable to distinguish between C. coccinea, C. vestita, and C. elegans. The first named was grown against a west wall at Kew and flowered there so long ago as 1849. *J. W. Besant, Glasnevin.*

EDITORIAL NOTIOES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

GARDEN-CRAFT IN THE CANTICLES—IX..

THE FLOWER GARDEN.

THERE is a remarkable simile in this Nature poem (Canticles V. 13): "His cheeks are (like) sweet flowers," or "banks of sweet herbs." The word translated flowers is not the same as that which occurs in an earlier passage (II. 12) where we read that "the flowers appear on the earth." Here we meet with a word (*natstsan*) which occurs nowhere else in the Bible, and is derived from a root meaning to shoot forth, to blossom, or else to glitter, to shine; whereas in the former passage the word emphasizes the fragrance of the plant. And this leads to an observation which is of the first importance in relation to the East and the old-time garden. It is often remarked that little mention is made of flower gardens, as such, in works relating to the Semitic people. There is much truth in the statement, and a few words may be written respecting the reasons.

The first is that in the olden times fruits were essential, flowers were a luxury. Hence, while much attention was given to the Vine and Fig tree, the Date and Olive, the Apple and Pomegranate, little thought was bestowed on the culture of the fleeting blooms. Moreover, there was usually such an abundance of wild flowers in Eastern lands that there was little need to cultivate them for the sake of their blossoms alone.

Another reason is to be found in the fact that perfume appealed to these people more than pleasing hues and colours. There were several causes for this. Perfumes were helpful and invigorating; they deadened the odours of an unpleasant nature, which are so abundant in most foreign countries; their essences prevented diseases, kept away injurious insects, and added greatly to the comfort and joy of life. They made acceptable offerings in their temples, and in other ways served purposes for which blossoms were less suitable.

The ancients, nevertheless, had an eye to the beautiful. The historian in setting forth the charms of Eden (Genesis II. 9) remarks that the garden contained every tree that was pleasant to the sight, as well as those which were good for food. They took note of the flowers; and, while Solomon is said to have discoursed on tree and herb and flower, Jesus urged his followers to consider the Lilies. We are to remember, further, that much depends on translation. The men of earlier times did not differentiate as we do. They spoke of trees, plants, or herbs in a way which included flowers, and since spices and perfumes appealed to them more than did the blossoms, they referred to the garden of herbs when we should speak of the flower border. Their herbaries and arbours were in reality flower gardens in many instances, and this is true of the "Song of Songs." We are well aware that such words as Rose and Lily, Shushan and Krinon, Apple and Oak, are often used, not in a specific sense, but in a generic or even wider manner.

One of the most striking evidences of the Hebrew love of flowers, however, is to be found in the large number of terms which are employed in the Old Testament and other Jewish writings to designate blossoms, flowers, buds, and sprouts. They have words for flourishing, shining, shooting, budding, and blossoming in rich variety, drawn from roots which set forth the splendour, brilliance, and variety of plant-life in a way which is quite surprising. To enter into details respecting these terms would be out of place in papers like these, but anyone, whether or not familiar with the Semitic languages, can confirm these statements by consulting the Bible Dictionaries, and Encyclopaedias, or by studying those passages in the Old Testament which contain such terms as flower, bud, flourish, blossom, and sprout.

The culture of flowers and herbs had gone so far that when the "Song of Songs" was written parterres, terraces, or flower-beds were in regular use, and our study would be incomplete if we did not say a few words on this method of floriculture.

There is a Greek word (*prasia*) which means a bed in a garden, a flower-bed or garden plot. It arose from the custom of planting Leeks and similar vegetables in rows, and so came to mean a company. Thus when the Saviour fed the multitude he commanded them to sit in companies or rows like Onions in a bed (Mark VI. 39), and "they sat down in ranks, by hundreds, and by fifties." Here is one early illustration from the garden plot. The Hebrew has a verb (*arag*) meaning to arrange, or lay out, as a plot of ground, and from this we get the word *arugah*, a bed or parterre in a garden, a plot of ground which has been arranged or laid out. It is used in the verse of Canticles which I have quoted, as well as in the next chapter (VI. 2) and in Ezekiel (XVII. 7, 10), where the vine is said to have shot forth its branches from the beds of the plantation, but shall wither in the beds where it grows. Thus vines and aromatic plants as well as flowers were grown in beds or borders. The Septuagint implies that in the garden there were vases or pots for aromatics, but it is not quite clear whether these were bowls in which the plants grew, or urns in which the dried herbs were placed. Other words used by the Greek translators are very instructive, but their study is hardly suitable for the present paper. I turn therefore to the flowers themselves.

What were the flowers which are mentioned in the "Song of Songs"? Were they typical garden blossoms? Did they fairly represent the flowers which were grown in olden times in the garden of a wealthy Jew or of a king? If we keep closely to these questions, the answer is that the number is very limited and quite typical. We read of the Rose of Sharon, the Lily of the Valley, Saffron, and the Mandrake. But the Rose of Sharon was certainly not a Rose, and the Lily of the Valley was also certainly not the flower which we to-day in England know by that name. At the same time the Rose was undoubtedly known and grown in Palestine at the time of Solomon, and when the "Song of Songs" was written. Indeed, some writers affirm that the correct reading of Canticles IV. 13 is "Thy shoots are an orchard of Pomegranates with precious fruits; Henna with Roses." The word *nardim*—spikenard, should be *vardim*—Roses. The emendation appeals to us very much. In the Arabic, *vard* or *ward* means a Rose, and it is certainly matter for great surprise that the Hebrew should not have the corresponding word. In Isaiah (XXXV. 1), where the Rose is mentioned again, the Septuagint uses the word for Lily, or perhaps for flowers in general. The writers of the Apocrypha, however, frequently speak of the Rose, and they use the Greek word *rhodon*, which is generally assumed to be the same as the Arabic *ward*. "I was exalted like a Palm tree on the sea shore, and as Rose plants in Jericho," says Ben Sira (Ecclus. XXIV. 14); and other passages might be adduced from Hebrew writers to show that they were familiar with the Rose, unless, indeed, the Rhododendron or Oleander is meant.

On the Rose of Sharon much has been written. Most authorities take it to mean the Colchicum or autumn Crocus, others, however, favour the Narcissus or some kind of bulbous plant, but all agree that it was something widely different from the true Rose.

Lilies of many kinds grew in the East, and as the writer of the "Song of Songs" uses the regular word Shushan, a Lily, we may be content to place that flower in our imaginary flower beds. It must not, however, be overlooked that many think the flower here mentioned, like those alluded to by the Great Teacher when he urged his disciples to "consider the Lilies," was a species of Anemone (A. coronaria).

The Saffron is mentioned under the Hebrew name *karkom* (Canticles IV. 14), and there does not seem to be any valid reason why we should not regard this as one of the plants to be found in the gardens of Engedi. "The Crocus," says a well-informed writer, "stands in the very front rank of Bible flowers. It is classed in the 'Song of Songs' among the prime favourites of the garden, and deservedly so; for in Eastern and in Western lands the Crocus is the most popular of spring flowers."

It will be observed that the Saffron Crocus, as distinguished from the Colchicum, has as its companions in the list of garden plants Spikenard, Calamus, Myrrh, and Aloes.

> "A garden enclosed is my sister spouse,
> Thy plants are the shoots of Paradise,
> Pomegranates with delicious fruits,
> The fragrant Henna with Roses,
> The Nard and Saffron Crocus,
> Sweet scented Reed and Cinnamon
> With every tree of incense."
>
> Canticles IV. 13

The scene is idealized; the lover is setting forth under these names some of the charms which the bride is supposed to possess. His Nard, scented Reed, and Cinnamon would not all grow in the garden, and if they did the Roses and Saffron would hardly be in blossom at the same time. These remarks are necessary in order that the practical gardener may not be led to misjudge the writer, and turn his words against him. The poet is not concerned with details such as these. For him the season of love is spring and summer in one, and his garden yields at once the flowers of April and the fruits of June.

The Mandrake is another flower of which note must be taken, because it has been from the earliest times associated with love. "The Mandrakes give forth (their) fragrance," we read (Canticles VII. 13), and they are usually spoken of as Love-Apples, and although the scientific philologist hesitates to accept the explanation, popular opinion in Palestine associated the plant named Dudaim with the Hebrew term for love. Details respecting this interesting plant, which is related to the Belladonna, may be found in all the many works which deal with Scripture botany. It is mentioned in Genesis (XXX. 14), where we read that Reuben found Mandrakes in the days of Wheat harvest. There were two species, the one (Mandragora officinarum, L.) found in spring, and the other (M. autumnalis, Bert.) in autumn, but as the latter is not a native of Palestine reference is undoubtedly made to the Love-Apple of spring, which, like the Mallow, was in use among the ancients for all kinds of enchantments.

Other plants which we may suppose the flower garden to have contained were the Poppy, Soapwort, Iris, Broom, Goat's Rue, Hollyhock, Rock Rose, and Oleander. Nearly all of these are alluded to in the Old Testament, and we know that most of them, with a number of others, were in cultivation in early times. There was, therefore, no lack of blossoms, alike charming to the eye and of pleasing odour, to stock the flower beds, and find work for the gardener. *Hilderic Friend.*

TREES AND SHRUBS.

THE ALDERS.

THE more or less moist conditions of 1924 and the lack of sunlight, have served to emphasize, if need be, the value of Alders for planting in damp surroundings. While their greatest value in our pleasure grounds and parks lies in their adaptability for the waterside and general planting in damp ground, several species and varieties make beautiful specimen trees for lawns and parks if planted in deep, rich soil. Taken in a broad sense the only trees the Alders at all resemble are the Birches (Betula), but, even in the few instances where there is a resemblance in wood, growth or leaf, the close observer soon distinguishes them. It is not suggested that the Alders rival the winter beauty of bark found in a number of the best Birches, neither can they compare in grace with the light branching habit of the common Birch. The fruits of the two kinds of trees are easy to distinguish, for while those of the Birch disintegrate and fall to pieces, the fruit of the Alder is woody and falls to the ground whole when fully mature.

The great majority of the Alders form their male catkins in autumn, but these do not develop until the days begin to lengthen and get warmer, in early spring. Two notable exceptions are A. maritima, the Seaside Alder, and A. nitida, the Himalayan Alder, both of which develop their catkins in autumn.

Seeds and layering afford the best means of propagating the Alders. Cuttings are worth trying in preference to grafting though, as a rule, only a small percentage root successfully. October and early November is the best time to insert the cuttings on a border outside. They should be made of the [recent summer's growth with a thin heel of old wood at the base. The varieties of A. glutinosa and A. incana are frequently increased by grafting, using the species as the stock.

Alders are useful subjects for planting in wet ground where comparatively few other trees would thrive, and they succeed in certain positions even better than Willows and Poplars. Naturally upright in growth Alders are valuable trees for coppice and woodland planting.

The Common Alder, Alnus glutinosa, attains a height of fifty feet to seventy feet or more. It is a common tree by watersides in Europe, including Britain, and extends into North Africa and West Asia. The wood is used for clog-making and the timber being very durable in water is valuable for piles when obtainable of sufficient size. That far-famed bridge, the Rialto of Venice, is said to be built on Alder piles. Among a number of varieties the most distinct and useful for ornamental planting are two cut-leaved forms; var. laciniata, an elegant tree with lobed leaves which give the tree a distinctly ornamental appearance; var. imperialis, a form with more deeply lobed leaves, the finely cut foliage making this a useful subject to plant as a specimen lawn tree of moderate size. The varieties quercifolia (Oak-leaved) and rubrinervia (red-veined) will commend themselves to growers who may be planting distinct forms of trees.

A. incana, the Speckled or Grey Alder, is a native of the Northern Temperate Regions, growing wild in Europe (not Britain), the Caucasus and Eastern North America. A free-growing tree up to sixty feet or more in height, it is a useful subject for planting in low-lying ground. Early in the year, usually during February, the male catkins, three inches to four inches long, are very showy, being perhaps most effective on trees by the waterside. As in the Common Alder, A. glutinosa, there is an interesting series of varieties of A. incana. The best of these for pleasure ground and park planting are var. incisa (laciniata of some nurseries), a beautiful cut-leaved Alder; var. ramulis coccineis, with red bark on the twigs, which is particularly effective in early spring when glistening in the sunlight; var. pendula, an interesting weeping form, and var. aurea, the Golden Alder, useful for colour planting in boggy land, together with the Golden-leaved Elder, Sambucus nigra var. foliis-aureis.

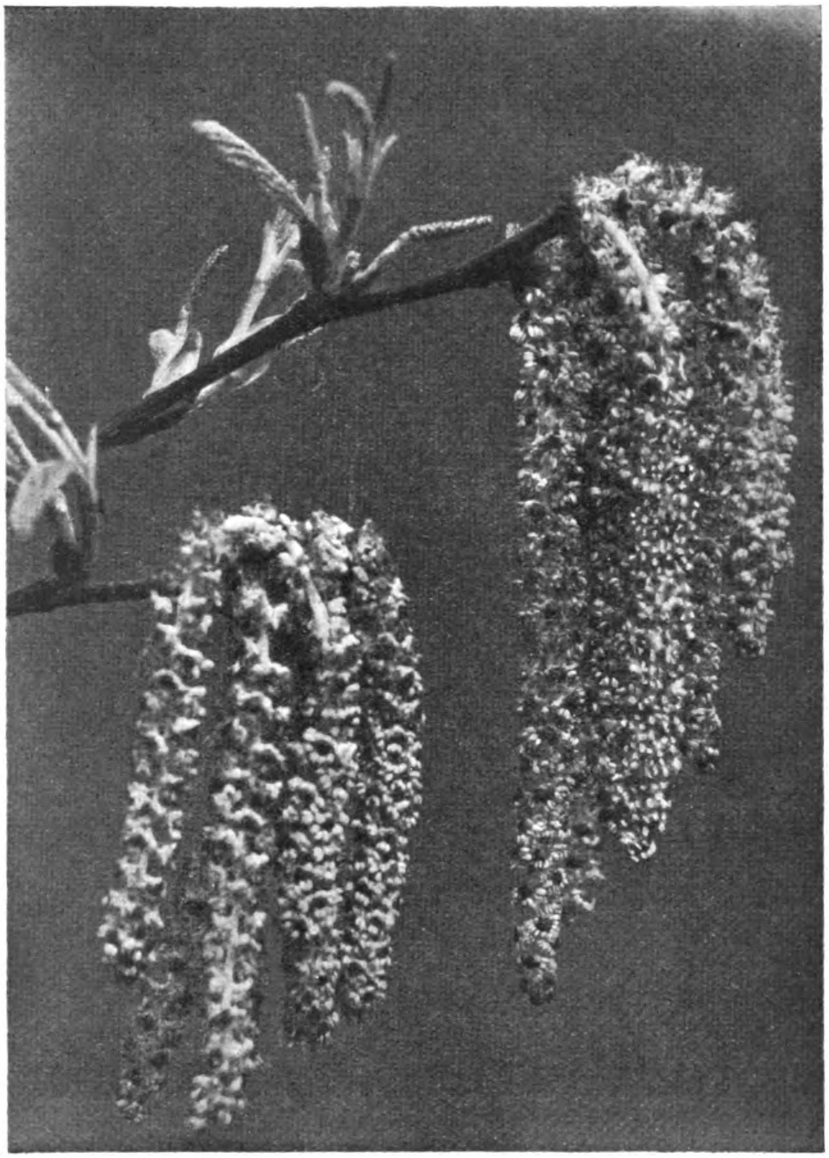


FIG. 130.—ALNUS VIRIDIS VAR. MOLLIS.

The Italian Alder, A. cordata, perhaps better known in gardens as A. cordifolia, is one of the best trees to plant on a large scale in wet ground. It is a fast-growing species, making a good specimen of pyramidal shape. There is a tree on the bank of the pond at Kew about seventy-five feet in height. Distinctive features of the tree are the large, lustrous green, heart-shaped leaves and the large, woody fruits.

A. viridis, the Green Alder, is of no particular merit for ornamental planting, but the variety mollis, illustrated in Fig. 130, is one of the most beautiful of all catkin-bearing Alders. According to Schneider it occurs with the type in the Bavarian Alps, the Tyrol, North Austria and Switzerland. As the name suggests, it has downy leaves and young shoots. A tree festooned with catkins four inches long—as shown in the illustration—is a beautiful sight in March.

Two Chinese species, A. cremastogyne and A. lanata, were introduced by Mr. E. H. Wilson from Western China. They are described as trees forty feet to eighty feet high. The leaves are among the largest of the genus, being up to six inches long and two inches to three-and-a-half inches wide. Both species have solitary, rather long-stalked fruits. A. lanata is distinguished by the woolly under-surface of the leaves and young shoots. We had a good example of the desirability of planting Alnus in wet ground during the dry season of 1921, when numerous young trees of these two species planted under normal conditions succumbed.

There are also two Japanese Alders, A. firma, a tree of moderate height, twenty feet to thirty feet, with prominently veined leaves, and A. japonica, a tall tree of pyramidal habit, fifty feet to eighty feet high. Both are distictly valuable trees for water-side planting.

The Himalayan Alder, A. nitida, thrives well at Kew, trees raised from seeds in 1882 being now over fifty feet in height. Native trees in the West Temperate Himalayas are said to attain more than double this height. The important character of this Alder, in addition to the large, shining, green leaves, is the development of the flowers in September. *A. Osborn, Kew.*

ACER NIKOËNSE.

Among the Japanese Maples there are many fine subjects which provide autumn colour, and Acer nikoënse is no exception. It is quite distinct in foliage from most Acers, the leaves being ternate; the terminal leaflet is from three inches to five inches long and nearly oval, while the side leaflets are smaller and stalkless. In summer one might pass a tree and never look twice at it, but when mid-October arrives there is a great change. The foliage gradually "lights up," the colouring beginning with the topmost twigs and working down to the lowest branches, until the whole plant appears to be aflame, and no one, however careless an observer, could pass it without favourable comment. Acer nikoënse is not a rapid grower, but in course of time it reaches quite respectable proportions. One of our specimens of this tree is over twenty feet high, with a wide, spreading head, and forms each October such a blaze of colour, that one is really sorry when "chill November's surly blast" strips it of its glory. *A. T. Harrison, Culzean Castle Gardens.*

THE HIBISCUS IN COLD DISTRICTS.

Hibiscus syriacus, or Althaea frutex, as it is still frequently called, is a source of great disappointment in the colder parts of the United Kingdom, in that it frequently fails to flower. In most places it should have as warm a position as possible, in order to induce it to bloom freely, and in numerous gardens where many tender things grow and flower well it fails, even in a favoured spot, unless subjected to special treatment. I know of one specially-mild garden in which this Hibiscus could only be flowered by planting it in one of the sunniest places which existed in the garden and training its branches so as to lie upon the slated roof of a very low outbuilding. In this position it gave its glorious flowers every year, whereas in other parts of the garden it would not bloom. *S Arnott.*

CRATAEGUS TANACETIFOLIA.

Although introduced from the Orient so long ago as 1789, the Tansey-leaved Thorn is seldom seen in gardens. It is dense in habit, and when fully grown forms a graceful, symmetrical, umbrella-shaped tree, twenty feet high, and as much through. In an open position in the shrub-border, or isolated on the lawn, Crataegus tanacetifolia is a conspicuous object in spring, when covered with its white blossoms, and again at this season with the deeply laciniated foliage and yellowish-green globose berries, 5/8 inch long, hanging in clusters along the branches on short, spur-like growths. *Fred W. Jeffery.*

RHODODENDRONS.

(Concluded from p. 333).

HYBRID RHODODENDRONS.

However much one may be prejudiced against hybrids and insistent on purity of species, there is no doubt that for the poor man, for the small garden, for town conditions, there is a great deal to be said in their favour. They are hardy, floriferous and cheap. Also they boast a gamut of colour, which ebbs and flows throughout five months of the year.

The chief arguments on the debit side are that too much of form and foliage is sacrificed to mere flower content, with the inevitable result of a rather stiff and prim monotony. Anyone can see this at the flower shows, where row on row of stiff-necked, fat and voluptuous hybrids are exhibited in the spring.

But in flower value the hybrids are hard to beat and their precociousness in this respect as compared with natural species, is invaluable. Good varieties may be rapidly increased by layering or grafting. In size of flower and bulk of truss the hybrid beats the species every time; but it is just here that from the aesthetic point of view the hybridiser oversteps the mark. As a general rule, the natural flowers and trusses are quite big enough, and any obvious increase of either is apt to go too far.

There must, however, be some limit, beyond which the mere size of flower and truss ceases to have artistic value; and the hybrid usually passes the critical point. Nevertheless, with the employment of new species for breeding, there has been something of a revulsion towards the loose truss with larger flowers, though since these are, as a rule, bred from "Maddeni," "Aucklandii" and other soft types, the results are, for the most part, greenhouse plants. The fine Aucklandii hybrids raised by Mr. T. Lowinsky are notable examples.

To dive deeply into the vast ocean of hybrid Rhododendrons is beyond the scope of this work; but since for certain purposes—and, perhaps, pockets—the hybrids have a pull over most species, they cannot be neglected entirely.

The species which have been most used in hybridisation in the past were, of course, those with which growers were most familiar. The Himalayan species, R. arboreum, R. Thomsonii, R. formosum, R. Griffithianum, R. Dalhousiae, R. barbatum, R. ciliatum; the American species, R. catawbiense and R. maximum; the near eastern R. ponticum and R. caucasicum; the Chinese R. Fortunei; and others. Many of the hybrids sprung from these species have established reputations and will ever be favourites—as, for example, Altaclarense, Pink Pearl, kewense, Shilsonii and praecox.

The introduction of new Chinese species has given a fillip to hybridisers and it may be said that likely new species are being used for hybridisation almost as quickly as they are being assimilated. In another decade or two there are certain to be scores of first-class new hybrids on the market; and it is a fact that, to-day, hybrids are more popular than species, and are likely to become still more so. The species, in short, will have to look out for themselves.

The possibilities of hybridisation are endless, and the most implacable purist cannot remain unthrilled by the vision thus conjured up. It is not necessary to be a wrangler (in the academic sense, of course) to appreciate the fact that if you have ten species, the number of *possible* first generation hybrids is 9 + (9 − 1) + (9 − 2) and so on to + (9 − 8), or forty-five. But these hybrids may themselves be crossed, first with the original species and then amongst themselves, so that it is impossible—despite Mendelian computations—to set a limit to the varied and variable offspring of our ten original species. And there are ten times ten species in action to-day. It must be remembered that no good will come of trying to cross species which have no affinity with each other. There are no blood taboos; racial prejudice is the ultimate stumbling block. By that fact alone is the number of possible hybrids theoretically limited. We may cross species of the same section as being closely related, and even species of allied sections. But we must not expect to cross species which are such complete strangers to each other, as, for example, R. Thomsoni and R. racemosum, to mention only two, each itself desirable.

The rule—an empirical one, however—seems to be, cross species as far removed from one another as possible within the limits of consanguinity. It matters not that one is a Himalayan species and the other a Chinese or American; if they are of the same caste they will mate.

Thus we can cross R. formosum with R. ciliatum, both of which belong to the "Maddeni" series: or R. Fortunei with R. Thomsonii, these belonging to allied series. But no one would expect to raise a useful hybrid by crossing a hardy alpine dwarf, such as a "Lapponicum" species with a tender Indo-Malayan tree of the "Irroratum" type, for example. Extremes do not mate. It seems, however, that in the second generation more divergent species may be brought together; and thus the red blood of the "Arboreums" has been infused into hardier species.

The great advantage of hybrids is that they flower young. Where a species may take ten or twelve years to reach the age of puberty, a hybrid as robust and large may require only half as long.

The better known hybrids are medium sized, bushy shrubs and small trees; fitted for isolation on the lawn, or for beds, or woods, or for flanking a carriage drive.

A few well-known varieties are mentioned in the following table; but there are hundreds more. Messrs. John Waterer, Son and Crisp, of Bagshot, who have the finest collection of hybrids in the country, introduced many of them. Another well-known firm is that of Messrs. Fisher, Son and Sibray, of the Handsworth Nurseries, Sheffield; and that Rhododendrons are by no means confined to the south and west is demonstrated by the success of the Handsworth Nurseries in introducing their fine Duchess of Portland, Handsworth Brilliant, and other notable hybrids.

Colour.	Early. March-April.	Medium. April-May.	Late. May-June.
Blood red and crimson	Ascot Brilliant	Bagshot Ruby or Doncaster	Sunshine.
Pink and rose	Broughtonii or Luscombei	Pink Pearl or Alice or Kewense	Duchess of Teck
White	Dr. Stocker.	Duchess of Portland or multiflorum	Beauty of Bagshot
Yellow	—	—	Smithi aureum or Broughtonii aureum
Lilac	—	Everestianum	Lady Decies or Ted Waterer
Purple	praecox	purpureum elegans	—

F. Kingdon Ward.

NOTICES OF BOOKS.

The National Rose Society's Select List of Roses.

The new edition of this indispensable publication* is now to hand and supersedes the previous one issued four years ago. It is compiled on very similar lines. Better type has been used for the section on Pruning Instructions with the result that the volume has become slightly thicker to the extent of half-a-dozen pages.

These Instructions differ little from those occurring in the former edition. The drastic treatment recommended for newly-planted Roses is now somewhat moderated for certain types. Climbing Teas and Hybrid Teas, we are informed, "are best not pruned the first spring after planting," and Ramblers "may be retained full-length if planted in Autumn." The writer can endorse the latter remission. The severe pruning of newly-planted ramblers results often in no bloom the first summer, whereas many, if pruned only lightly or left unpruned, may give quite a respectable amount of bloom the first season. The desirability of pruning Wichuraianas in early autumn is not so insisted upon as in the previous edition. The instruction recommends only the removal of "one or more of the oldest growths each autumn." Three of the illustrations have been changed in order, no doubt, to indicate better how much of the shoots in pruning have to be left. Unfortunately, these new plates lack the clearness of the old ones.

The reviewer naturally finds his chief points for comment and criticism in the Descriptive List of Roses. As the Preface rightly remarks, this List of Roses is a selection and not a catalogue. The choice is limited to about four hundred varieties of Roses of all sorts. There is no diminution in the number of new varieties introduced by our hybridisers—in fact, the number tends to increase rather than otherwise—consequently, the Publications Committee of the National Rose Society has to discard from a fresh edition a goodly number of varieties which figured in the previous list, in order to make room for the newcomers. Over sixty varieties which appeared in the 1921 edition have been eliminated, and a similar number of new varieties inserted to take their places. Of the departed, it is interesting to note that quite half were only introduced within the last decade or so. They are Roses which have never become well known in gardens. They either lacked vigour or showed some other conspicuous fault, or have been found to be not superior to older varieties similar in habit and colour. Ephemeral Roses, in fact, whose loss we do not mourn.

It is otherwise with the remainder. Some favourites have had to be relinquished. We are apt to cling to some through sentiment, and to be tardy in acknowledging that they have been superseded. The dwindling Hybrid Perpetuals have suffered still further diminution. That old show Rose, Horace Vernet (1866) has gone at last. The wonder is that it has been retained so long, considering its poor constitution. We are glad for old time's sake that Général Jacqueminot is still to the fore—even yet unsurpassed for colour and scent combined. A much more recent crimson, H.P., Commandant Félix Faure (1902) has also vanished. A select dozen is all that now remains of the H.P. class which dominated the Victorian age.

The writer views with equanimity the rejection of the following six well-known Hybrid Teas: Duchess of Wellington and Florence Pemberton (both hopeless in wet weather), Ecarlate (Red Letter Day and K. of K. have taken its place), Mme. Jules Grolez (never sufficiently vigorous and superseded by better pinks), Mrs. C. Russell (frankly we have never been in love with this Rose in spite of its superb stalk), and Prince de Bulgarie (not wanted now that we have Ophelia and its sport, Mme. Butterfly).

Some qualms, however, are felt over the following four omissions:—Augustine Guinoisseau, Liberty, Mrs. Aaron Ward and Rödhätte. The first-mentioned, better-named White or Blush La France, as it is a sport of this famous variety, is a wonderfully vigorous and free-flowering Rose, with the full perfume of its parent and without its grave defect of balling badly in wet weather. Its chief fault is a certain lack of distinction. But have we a blush bedding Rose so perfumed and so free? Liberty, one knows, is lacking in vigour, but it may be questioned whether we have sufficient deep, velvety crimsons, perfect in shape, to discard this one yet. What a perfect buttonhole Mrs. Aaron Ward makes when at her best. It is, of course, largely a failure in wet weather, and is apt to become pinkish without sufficient warmth. Perhaps there is a newer Rose of its colour, which can take its place. If not, one regrets its omission. Why Rödhätte should have been left out is a little difficult to understand. Its individual flower from the point of view of form has nothing to recommend it, but then that applies to the majority of the polyantha pompons. It is very floriferous, of a fast colour, and holds its flower trusses erect, which is, unfortunately, not always the case with Orleans and the like. I was much struck with the display Rödhätte made in a local nursery last September in spite of the cold and wet.

The rejection of Jessie, usually regarded as the most popular red Polyantha, *agreeably* surprises me. Potentially, it is just the thing for edging, but its performance is far short of its promise. With me it has the annoying habit of failing to expand its flower buds. Whole trusses of bloom and even complete plants this summer disappointed in this way. It is not that the buds rot off with the damp. They reach a certain stage and then cease further expansion, finally withering without ever unfolding.

Turner's Crimson Rambler, after a long reign (a sensation of 1893) disappears. Now that we have Excelsa there is little need to struggle with this mildew slave, though it does come into bloom a little earlier.

It is not quite obvious why such a Rose as Mrs. David McKee should have been omitted from the last three editions. It was brought out by Messrs. A. Dickson and Sons in 1904. It is a full Rose of perfect shape, lemon-white in colour, fragrant, borne as a rule on a strong stalk, and stands the rain exceptionally well It has particularly pleased me this cold, wet summer and autumn. One might pronounce it the best Rose of its colour, unless it be now surpassed by the more recent variety, Clarice Goodacre (1916). This latter from the same firm has not, as yet, come within my ken.

An innovation in the new edition is the removal of the Rose species from the General Descriptive List to a separate one. It is questionable whether this is an improvement. There is no longer a list of the most promising newer Roses. These are incorporated in the general list. For convenience one would advocate a single alphabetical descriptive list. This would now have been forthcoming if the compilers had not brought in the above innovation. For those readers of *The Gardeners' Chronicle* unfamiliar with this handbook, it is well to point out that besides the Descriptive List (or lists), there are tabulated lists of names only, for the various classes into which garden Roses are divided, including one devoted to species and their hybrids. These classes remain the same as in the previous edition.

Roses are also arranged in tables according to the purpose for which each variety is best suited. There is here but little alteration. The list of tall Roses for beds is omitted. Two fresh colour groups are added, *viz.*, coppery-Rose and yellow-shaded.

If feasible it might add to the usefulness of the handbook to have lists of bedding Roses which withstand the rain best and which have extra strong stalks. Might it not also be advantageous to indicate in the Descriptive List by asterisks the quality of perfume somewhat as follows:—no star, scentless, *e.g.*, Frau Karl Druschki; *, slightly fragrant, *e.g.*, Lady Pirrie; **, fragrant, *e.g.*, Richmond; ***, very fragrant, *e.g.*, General McArthur. *J. P. Carlisle.*

The A.B.C. of Gardening.

This book*, one of a number which Mr. A. J. Macself has recently written, has been prepared, as its title would suggest, to guide those who are about to learn the large and intricate alphabet of gardening, and in so doing the author attempts, in no unsatisfactory manner, to explain the why and the wherefore of the many simple practices in horticulture with which the novice would have to deal. As Mr. Macself does not pretend to be a horticultural scientist, the reader has to be satisfied with many statements which would not bear a scientific analysis; yet it is beyond question that the author arouses interest and, to those whose inclinations tend in that direction, the book on that score alone might serve as an introduction to a more advanced study of the underlying principles of horticultural routine. The book is divided into four parts; the first "concerns garden principles"; the second is devoted to "garden stock"; the third to "routine work"; and the fourth to various "important phases of gardening," containing in all twenty-five chapters. The information given is generally good and, by the aid of line illustrations, we are shown how to carry out many gardening operations. There are also a few illustrations in half tone and four coloured plates which are of average merit.

Rock Gardening in New Zealand.†

In this practical handbook the author has given us a handy little volume, which should be useful to the beginner in New Zealand, where the cult of the rock garden is evidently in an early stage. The book is nicely got up, with many illustrations, although some of these are marred by the ugly fences in front of the rockwork. The chapters on the building, planting, and cultivation are, more or less, a description of what has been done in the Dunedin Botanic Gardens, and which has been found most suitable for the climatic conditions of New Zealand. The author advocates the use of an alpine house as a necessary adjunct of the rock garden if a comprehensive collection of alpines is to be cultivated; with a few cold frames and a plunging bed where the plants may be grown during the summer, and brought into the house to flower in the spring. There are also chapters on wall gardening, the moraine, rocky borders and edgings for paths, and the bog and water garden. Then follows an alphabetical list of most of the well-known alpine plants at present in cultivation in New Zealand, most of which are growing in the Dunedin Botanic Gardens. These are mostly from the Alps of Europe and the mountain ranges of Asia, but there is also a chapter on native plants suitable for the rock garden, many of which have not yet been introduced into British gardens.

At the end are given selections of plants suitable for various purposes, such as for growing on walls, in shade, on limestone, in the bog or water garden, or under trees, as well as a list of shrubs suitable for the rock garden proper.

---

* The National Rose Society's *Select List of Roses and Instructions for Pruning*; New Edition, 1925.

* *A Real A.B.C. of Gardening.* By A. J. Macself. Pp. 215. Thornton Butterworth, Ltd., Bedford Street, Strand, W.C. Price 6s. net.

† *Rock Gardening in New Zealand.* By David Tannock, Superintendent of Gardens and Reserves, Dunedin. Published by Whitcombe and Tombs, Ltd., Dunedin, and 9 and 10, St. Andrew's Hill, Queen Victoria Street, E.C. 4. Price 3s. 6d. Postage 3d.

PUBLIC PARKS AND GARDENS.

The Worthing Town Council has adopted a scheme for the extension of the parade and esplanades westward for about half-a-mile to Wallace Avenue, at a cost of £18,000. It includes provision of a new public pleasure-ground and the lay-out of the Marine Park building estate on town planning lines.

The Willesden Urban District Council has received the sanction of the Ministry of Health to spend £8,600 on a sports ground and an arena.

The City of Glasgow proposes to spend a considerable sum of money on public parks and open spaces, including £4,000 for the levelling of the ground at Moss Park Boulevard, to extend the pathway at Linn Park, to form tennis courts at Maxwell Park, and to make improvements of the Park Drive north entrance to the Victoria Park, this latter scheme to cost £5,000.

Wimbledon Borough Council have a scheme in hand for the making of sixteen to twenty tennis courts, six bowling greens, a swimming pool, putting greens, and the erection of refreshment rooms, pavilions, etc., on a site in close proximity to the All-England tennis ground.

Brighton's Town Council proposes to expend some £20,000 in levelling the site of the new Municipal Secondary School playing-fields at Varndean.

The Birmingham Town Council proposes to purchase part of the Harborne Golf Course at a cost of £4,500. The area of the land is approximately 29½ acres. The Parks Committee propose to utilise the ground as a golf course, and the financial returns from the Warley and Lickey Courses was such as to leave no doubt in the minds of the committee that the Council would be justified in acquiring the land and opening it as a municipal golf course.

A very beautiful display of Chrysanthemums has been staged during the past week or two in the large greenhouse in Chalkwell Park, Westcliff, and a large number of visitors have been attracted to the display. The Southend Corporation has procured a representative collection of varieties of all types of the flower, and these have been well grown by Mr. Keeling at the Priory Park and Chalkwell Park respectively, for the special purpose of exhibiting them to the townspeople. The Corporation recently sanctioned the removal of two fine glasshouses from an estate recently purchased by the town — one each to the Priory and Chalkwell Parks. They will be utilised for the purpose of raising stock, etc.

Nottingham Corporation has made application [to the Ministry of Health for leave to borrow £208,000 for the purchase of Woolaton Park and Hall. Sir Jesse Boot has offered to contribute £25,000 towards the cost, conditional on the municipal authorities setting aside one hundred acres of the park for the benefit of the children of the city.

A few months ago the Town Council of Dalkeith decided to purchase the King's Park, Dalkeith, from the Buccleuch Estates, Ltd., at the price of £2,600, a considerable reduction from the price suggested by a mutual valuer. Objection was taken by a number of ratepayers, and a poll of these was held on November 5. As a result of the poll the proposed purchase was approved of by 1,462 votes against 380.

Mr. and Mrs. ffennell have presented the town of Wytham with some thirty acres of land near Ferry Hinksey for the purposes of a public park. The late Sir Walter Raleigh lived close to the place, and it is proposed to associate his name with the new park.

HARDY FRUIT GARDEN.

WALL FRUIT TREES AND WATER.

A favourite theme with the older generation of gardeners when they foregather is the wretched manner in which wall fruit trees are managed in these decadent times, compared with the days of their youth. The truth of this as a general statement cannot be questioned, but it is an equally incontrovertible fact that there is solid reason for it. To-day, there is not one head gardener in five hundred whose staff permits of the immense care being devoted to the task that might be wished, and he finds consolation for irregularities of alignment in the production of excellent crops, which is, after all, the one *raison d'etre* of trees on walls. Provided they yield regularly and well, the gardener cannot afford to worry about the minor faults.

Incomparably more serious is the failure of trees to bear satisfactorily owing to the debility which afflicts them when they are not given adequate supplies of water at the roots. One might go as far as to assert that neglect of watering is the most common of the various causes which lead to poor returns and frequently to the death of valuable trees. The gardener who succeeds is he who sees to it that the soil above the roots is always moist—if it becomes dry in the autumn or winter he soaks it with the same thoroughness, though, obviously, not with the same frequency, as he does in late spring and summer. Trees on north walls do not make equal demands for moisture with those on south walls, but they, too, suffer on occasion unless the watchful eye is always upon them. The absorptive power of bricks is remarkable, and walls throw off from the soil at their feet much of the rain that falls. It is a truism that abundance of soil moisture in the open quarters of a garden does not, of necessity, spell an amplitude at the foot of walls.

FROST AND PRUNING CUTS.

Those who are able to do their pruning at the ideal time- that is to say, before the whole of the leaves are down—have reached practically to the end of this important and interesting operation. In the majority of gardens, however, little more than a start has been made, and there will not be finality until the early months of next year. Working through December to February, and even to March, involves coming within the period of more or less severe frosts, and it will be useful if experienced cultivators will give their views as to the wisdom of continuing to prune during their prevalence.

There is a widespread conviction that frost finds access at the cut caused by pruning, rends the tissues, and is thus a direct cause of shoots dying back. Personally, no substantial evidence of this has come in my work, nor has sufficient proof of it been brought to my notice by other growers. Apart from the discomfort, I know of no reason against pruning during hard frost, but I have not lived in the coldest parts of the British Isles. During the cold spell in the early part of 1917 I pruned young and old Apple and Plum trees when the thermometer showed 20° of frost, and registered 30° in the night following, and no damage was done. It was a painfully unpleasant business, owing to the intense cold, but it was an opportunity such as does not present itself every year, and it was grasped for the sake of the experiment. The knife alone was used in the young trees, but in the old ones it was necessary also to call into requisition the saw, chisel, secateurs, and standard tree-pruner. The greatest care was exercised to make the cut in the correct position, *i.e.*, the bud midway between top and bottom, but as users of a 6-feet standard pruner are aware this could not be ensured in every instance. *W. T.*

THE POTATO CROP IN SCOTLAND.

I have in previous years sent to *The Gardeners' Chronicle* a few lines about this time regarding the Potato crop in Scotland, because that crop is the source of a large portion of the tubers used in England for seed. Two years ago, it will be remembered, there was a superabundance of Potatos and towards the end of the spring of 1923 prices fell to very low figures, and many lots failed to find a market. When on holiday in the summer of 1923 in the north of Scotland I saw many long pits or clamps which had not been touched since they were put down in the autumn of 1922 and the tops were forests of haulms. In 1923 it was possible to buy Majestic and other varieties at thirty shillings per ton. In the spring of this year it was quite a different story. Before the selling season finished merchants who had quoted early booked orders and had not covered their sales, found that they had to pay as much as they were receiving and sometimes more for supplies to fill contracts.

The acreage planted in 1924 should, with a good season, have yielded sufficient to keep prices round about the average, but cold, wet, bad growing-weather has ruled and disease (Phytophthora) has been more prevalent than for many years. Early varieties which were lifted and clamped in September have kept atrociously badly. Two small instances will exemplify the general state of things. One grower had six acres of Witch Hill—all have gone. Another had a similar acreage of Midlothian Early, and out of twenty-four tons put into clamp he has dressed out six tons! Is it any wonder, therefore, that anything from £15 to £25 per ton is being asked for seed sets of early varieties? My opinion is that they will be unprocurable in March and April; Epicure and Eclipse are almost so now. Second-early and main-crop varieties have been and are still being got up under very unfavourable conditions. Up to within the last few days the condition of the ground and of the atmosphere has been all against the farmer. Hardly any variety, even those like Kerr's Pink, has escaped the blight. How these will dress out of the clamps after the New Year it is impossible to forecast.

Growers in the south who have crops from seed Potatos obtained fresh from Scotland or Ireland last spring should certainly save their own seed tubers for next year's planting.

What about new varieties? Messrs. Sutton and Sons, have withdrawn Dunvegan as it has been attacked with mosaic disease; a very wise step which will inspire confidence. They have introduced Ben Cruachan and Ben Lomond. These have not yet been grown largely in Scotland, but I have heard some good accounts of them. Mr. MacKelvie gave us a new one last spring—Arran Consul. It has cropped heavily but requires to be grown another year at least before a final opinion can be formed about it. Findlay's varieties, Di Vernon and Catriona, have cropped well—the former is a first-early with a very distinct top; a kidney-shaped tuber splashed with light purple. Catriona is a fortnight later, similar in form (rather less kidney-shaped, perhaps) with the colouring confined to the eyes. It is an excellent cooker. What is badly wanted is a new first early, immune to wart disease. Such seems to evade the efforts of all raisers. Field-Marshal has earned a reputation for cropping and cooking, particularly from good, light land. It is not incorrectly described as a russet form of the old Up-to-Date, but it is not immune to wart disease. *W. Cuthbertson, Duddingston, Mid-Lothian.*

VEGETABLE GARDEN.

ONIONS FOR AUTUMN SOWING.

While all the varieties of Allium Cepa may be sown in autumn with fair prospects of success, the Spanish or Portugal, and the Tripoli or Italian Onions are by common consent considered to be the most suitable.

In our country the Spanish type is known best of all, and the fact that immense quantities of the matured bulbs are yearly exported to England from Spain and adjacent countries in such splendid form and condition, and are usually obtainable at very reasonable prices, while a fine, true stock of the seed is costly and somewhat difficult to procure, are hindrances to its more extensive cultivation by British gardeners.

Although some of the finest bulbs come to us from Spain the culture of this Onion is not confined to that country, but is spread over the north-west corner of Africa, with Madeira and the Canary Islands included; indeed, its most appropriate name is the Santa Anna Madeira. This gives us a clue to its origin. There are two varieties, but while the form differs the qualities are the same. The favourite in the English market is the slightly elongated globe variety, but, as stated by Miller, "The Strasburgh will not keep long to its kind, but will by degrees grow flatter, as do the large Portugal Onions when planted in our climate, which, in a year or two, will be so degenerated as not to be known they were from that race." The fine quality and appearance of this Onion commended it so strongly to the late Mr. W. Atlee Burpee that he re-named it (very appropriately) Gigantic Gibraltar. It has several other names, but remains the same Onion.

The best strain of the Prizetaker type of Ailsa Craig owes its existence to this variety; in fact, it is the parent of all the largest globe varieties.

White Portugal (syn. Philadelphia White, with a silver-white skin), has been known and grown largely for many years in America, particularly in Kentucky; it has been brought to notice in England by the Royal Horticultural Society trials at Wisley in 1923, when it was Highly Commended as a pickling variety. If, however, the seeds are sown thinly in the spring they will produce nice bulbs measuring fully three inches in diameter, possessing a mild and somewhat sweet flavour. The attractive appearance of the bulbs is preserved indefinitely if they are harvested so soon as they are ripe and carefully dried, under shelter, away from strong sunlight.

White Lisbon is, perhaps, the most popular Portuguese Onion, seeing that many tons of seeds are sown by British market gardeners every year, to furnish early Spring Onions. It is a late-maturing variety, and, when fully developed, is a large, soft, ill-shapen bulb, with a thick neck, and is of no use for keeping purposes. In favourable seasons it is a very free-seeding variety, and the seeds are consequently sold at very low figures. Occasionally, however, it happens that the seed is hardly to be had for love or money. As gardeners sow about sixty pounds of seeds to the acre, price is an important item. Onion seed is accounted the most speculative article the seedsman handles, and White Lisbon is easily the limit.

The other Portuguese variety is the well-known Cranston's Excelsior. Considerable differences of opinion exist as to the country of origin of this variety. Vilmorin's *Vegetable Garden* states that "Some small differences apart, it may be considered as a derivation of Danver's Yellow Globe. The late Dr. Masters held that it was the French Trebons, and Mr. Cranston informed the writer that his firm originally obtained it from Portugal, and there the writer is content to leave it. Mr. J. Wilson (successor to Cranston) holds that Ailsa Craig is merely Excelsior re-named, which is quite true so far as some strains of the former are concerned. At any rate, Excelsior was first in the field.

The Italian or Tripoli varieties next claim our attention. They are a most important section, and had obtained a firm footing in northern markets before Ailsa Craig came into existence.

They are quite a distinct type, with thick, fleshy scales, mostly very mild and of a sweet flavour. They need careful handling and storing, for, with very few exceptions, they are not long keepers.

The colours vary from silver-white through pale yellow, brown, and rose to a very deep blood-red. The silver-white varieties are the most numerous, and these, in Italy, are named after the month in which the bulbs are ready for the market. They are all sown at the same time in Italy when required for market work, the sowing being made so soon as it rains the first time in September.

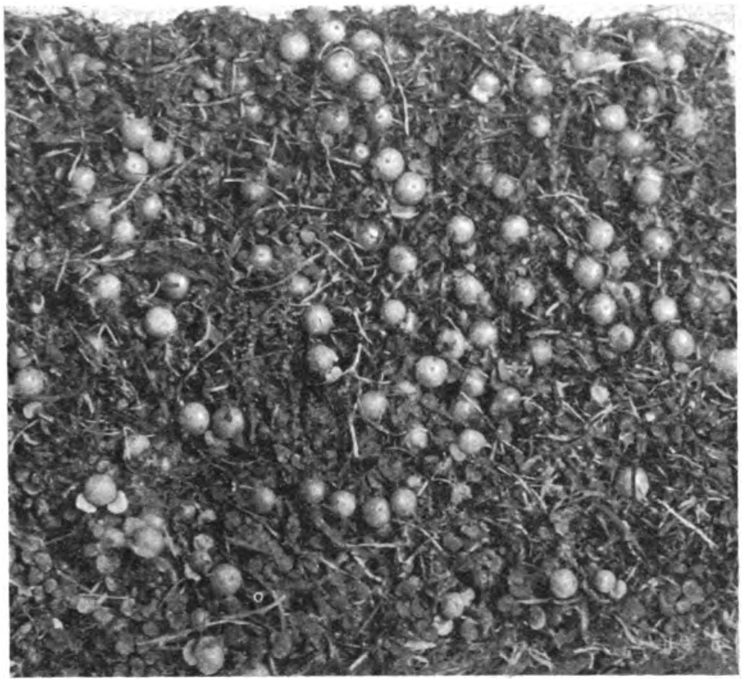


FIG. 131.—NERTERA DEPRESSA NATURALISED IN A TENNIS LAWN IN SCOTLAND. (see p. 360).

The following list gives the Italian names and the names under which the principal varieties are known in this country:—

Meraviglia di Barletta	Marvel or Barletta.
Marzatica (March)	The Queen
Aprilatica (April)	Nocera.
Maggiajola (May)	Early flat white Italian.
Giugnese (June)	Large flat white Italian.
Agostegna (August)	Mammoth or Leviathan, known also as Giant White Garganus or Mammoth Silver King.

Of the coloured varieties the Giant Rocca (brown) is by far the most popular. This is in great measure due to the enterprising and persistent advertising of Messrs. Daniels Brothers, of Norwich.

Forty years ago their advertisements confronted us on every hand, and as this Onion was really good, being quite distinct, mild, long-keeping, and in every respect satisfactory, the sale went up by leaps and bounds, and its popularity continues to this day. There is now a blood-red form of it, equal in every way to the brown. It is specially popular in America and the southern hemisphere, where coloured Onions find a more ready sale than with us. A very fine, pale yellow-skinned variety is offered as Lemon Rocca, but it has been renamed Prizetaker, and is deservedly one of the leading varieties at the present day.

Of flat, red Onions there are three distinct varieties, first, The Mammoth Pompei (syn. Copper King), a deep, coppery brown; second, the Large Flat Red, the original variety, and lastly, the Bassano, called also the Genoa Red, the leading variety in Lombardy. Seed grown in northern Italy produces a large, sweet, mild, solid bulb, which keeps for a fairly long time. This Onion is specially adapted to the British climate.

The Red Flat Madeira and the Red Globe Madeira complete the list. These are very large and handsome varieties when grown under favourable climatic conditions, but their keeping qualities leave something to be desired.

Miscellaneous kinds of Onions include the Welsh Onion, Allium fistulosum, Linn.

Of this there are two distinct varieties, and the leaves of both, which have a strong flavour of Onion, are used for seasoning. In Japan the white variety is treated as a Leek. It is sometimes called the Siberian Leek. Siberia is reputed to be the country of origin. The common or French Red (French, *Ciboule*) is a variety with brownish-red, very long enlargements, and is most frequently grown in Europe. If treated as a biennial it produces an abundant crop of seed.

The Early White or English-Welsh Onion is a distinct type, shorter and smaller than the red, and of a more delicate flavour. This is the favourite variety in America. The plant dies down in the winter but makes fresh growth early in spring. It is sometimes used to flavour salads where Chives are not available.

There is also a strictly perennial variety, Allium lusitanicum, which does not produce seed. Its uses are the same as those of the ordinary varieties.

Bulb-bearing Onions are known as American Top, or Button, Tree, or Egyptian, these being the names of a curious but very interesting plant which produces a cluster of bulblets on the top of a seed stalk; the bulblets, when planted, make small, irregular-shaped Onions that are sweet and tender. The plant is a perennial and is propagated by the bulblets; it does not produce seeds. The fully-grown bulbs are offered in some French catalogues as Rocambole.

A variety of the foregoing was offered from America some years ago under the name of the Catawissa Onion, in which the bulblets commenced to grow without being detached from the top of the stem, sending out stems which also produced bulblets; the latter also produce stems and leaves growing to nearly three feet high. The culture of these Onions is very simple and they have been successfully grown in Essex.

The Potato Onion is a brown-skinned variety which grows mostly in clusters like Shallots. If planted singly early in the year well-grown Onions are produced in June, which are of an exceptionally mild and pleasant flavour. Potato Onions are very successfully grown in Ireland. The true variety does not produce seed, but some German firms offer seed of the four following varieties, viz., yellow (brown), red, light yellow and white. As they are named Allium ascalonicum var. they are doubtless akin to the Shallot. *S. B. Dicks.*

HOME CORRESPONDENCE.

Nertera depressa Naturalised in Scotland.—Although Nertera depressa is frequently described as a hardy plant in the southern parts of England, it is not so in the north, consequently my surprise and delight were great when my attention was drawn to a case of its naturalisation in Scotland. A keen amateur gardener and botanical friend of mine recently invited me to see "his find" growing freely at Glenoran Row, Helensburgh. I responded to the invitation and found a lawn fully an acre in extent around the house, and over the whole of this area Nertera depressa had spread and was fruiting freely. Curiously enough, in the tennis lawn, which is frequently mown and rolled, the plant is found in the greatest quantity, and still more curiously the most fruits are found there. On the south side of the house the grass is also full of Nertera depressa, but the berries appear only in patches. Around the margins of some Himalayan Rhododendrons the plant is growing in masses, but it does not berry in this semi-shady position. Glenoran is about one mile from Gareloch, and its elevation is about two hundred feet above sea level. I enclose a piece of turf (Fig. 131, p. 359) showing the Nertera fruiting freely. This is the first time I have seen or heard of Nertera depressa naturalising itself in Scotland, indeed, I do not remember having heard of its doing so in England. *James Whitton, Bellahouston House, Glasgow.*

[In view of Mr. Whitton's observations, it is interesting to quote the late Reginald Farrer's observations on this delightful little plant in *The English Rock Garden*; "Nertera depressa is a minute, half-hardy New Zealand mat of creeping, bright-green foliage in spreading cushions, all over which, after the unnoticeable flowers, develop quantities of glowing, terra-cotta and scarlet balls of fruits like round comfits. It will be happy out of doors in a sheltered, shady corner of the rock-work, in damp, sandy loam; and will even bear our winters, though pieces should always be dug off and potted up in autumn for safety's sake."—Eds.]

Mertensia sibirica.—Let me apologise to Mr. A. T. Johnson (page 333) and to you, sir, for a slip of the pen that caused me to describe difficulty in cultivating Mertensia sibirica, which is perfectly at home here. It was M. virginica that I had in mind; a charming species which has never consented to permanent residence here. I shall be very grateful for information as to its requirements in soil and exposure. *Herbert Maxwell, Monreith.*

SOCIETIES.

ROYAL HORTICULTURAL.

November 18.—There was nothing of outstanding merit shown at the fortnightly meeting of the Royal Horticultural Society at Vincent Square on the above date, and in point of size the exhibition was much below the average standard. Chrysanthemums were the principal flowers, and many new varieties received an Award of Merit from the Floral Committee. There were also two groups of vegetables and a few new Orchids of great beauty. Paintings of flowers and garden scenes were exhibited by a number of artists.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Messrs. Gurney Wilson (Secretary), Jas. O'Brien, C. J. Lucas, H. T. Pitt, Henry H. Smith, H. G. Alexander, S. W. Flory, Chas. H. Curtis, J. E. Shill, A. McBean, John C. Cowan, J. Wilson Potter, E. R. Ashton, and T. Armstrong.

First-Class Certificate.

Miltonia William Pitt, var. atropurpurea (Bleuana Reine Elisabeth × Isabel Sander).—From Messrs. Charlesworth and Co., Haywards Heath. The third of their marvellous cross to receive recognition by the Orchid Committee, and the best. The new variety shown was one of the most perfect in form and the richest in colour of any Miltonia, either species or hybrid. The flowers are equal in size to those of M. Bleuana, dark ruby-purple in colour with a velvety surface; the base of the lip is white, with purple lines radiating to the centre.

Awards of Merit.

Miltonioda Boadicea (Miltonioda Harwoodii × Miltonia vexillaria var. Lyoth).—From Messrs. Charlesworth and Co. A larger flower than that of M. Harwoodii, but retaining much of its characters. The sepals and petals are claret-red, and the lip bright magenta with some yellow lines at the base.

Odontonia regalis (M. vexillaria Queen Alexandra × Odm. Aquitania).—A very pretty hybrid, quite intermediate between the parents, the flower equalling an Odontoglossum in size. The sepals and petals are white with a rose inner flush bearing distinct reddish-purple blotching, the lip is broad, blush-white with crimson spotting. From Messrs. Charlesworth and Co.

Groups.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, were awarded a Bronze Banksian Medal for an effectively arranged group with good Odontoglossums, Odontiodas and fine forms of Oncidium varicosum. In the centre, among the white Cattleyas, the fine C. labiata var. Reedleyensis and C. labiata var. La Vierge, one of the largest and finest in form, were prominent. Colour was given by Laelio-Cattleya Ettrick, the large and showy L.-C. Pathfinder, varieties of L.-C. Linda, and some good yellow forms.

Messrs. Cowan and Co., Southgate, were given a Bronze Banksian Medal for a pretty group in which Cypripediums were well represented. Brasso-Cattleya Nestor (C. labiata × B.-C. Madame Chas. Maron) with large rose flowers and purple lip, and other Brasso-Cattleyas were represented by finely-grown specimens, as also were the yellow and purple Cattleya Aeneas and L.-C. Nanon (L.-C. Ivanhoe × C. Dowiana aurea), a very handsome hybrid. Among the Cypripediums the forms of C. Leeanum included the variety J. Gurney Fowler, still one of the most distinct. C. Gratrixiae, which shows C. Spicerianum more than others; C. Christopher, C. Elatior, and the F.C.C. form of C. Antinous, one of the largest of the class, were also well shown.

Other Exhibits.

Lt.-Col. Sir George L. Holford, C.I.E., K.C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander), showed Cypripedium Mme. Albert Février var. pulcherrimum (Germaine Opoix × insigne), a model flower, large and beautifully marked. The broad dorsal sepal is white, tinged with rose on the upper third, the base sap-green with closely arranged dotted lines of dark claret-red. The petals and lip are tinged with mahogany-red, the former having dark spotting. Cypripedium Imperator, Westonbirt variety (Alcibiades × Pyramus), is a fine flower of good shape and substance, the dorsal sepal white on the upper half, the lower part bearing dark claret-red lines. Messrs. Flory and Black, Slough, showed the new Laelio-Cattleya Cherub (C. H. T. Pitt × L.-C. Serbia), a large flower with rosy-mauve sepals and petals and purplish-crimson lip; Brasso-Cattleya Fabia (C. Fabia × B.-C. Massangeana), a good addition to the large coloured forms; and B.-C. Zephyra.

Floral Committee.

Section A.—*Present;* Mr. Henry B. May (in the Chair), Messrs. H. J. Jones, W. Howe, W. Cuthbertson, M. C. Allwood, W. B. Gingell, J. F. McLeod, D. B. Crane, W. P. Thomson, J. B. Riding, and E. R. Janes.

Section B.—*Present:* Mr. Gerald W. Loder (in the Chair), Messrs. G. Reuthe, F. G. Preston, C. Williams, Reginald Cory, G. Yeld, E. H. Wilding, C. T. Musgrave, T. Hay, R. C. Notcutt, W. J. Bean, W. G. Baker, W. B. Cranfield, and James Hudson.

Awards of Merit.

Carnation Anne Corry.—A magnificent rich, crimson-maroon, perpetual-flowering Carnation of excellent form and of large size. The growth of the specimen plant exhibited was exceptionally vigorous and strong, and the calyx is non-splitting. The flower possesses good fragrance. Shown by Mr. G. Carpenter, Byfleet.

Chrysanthemum Annette.—This variety has a very stiff stem, and the large, single flowers have a rich yellow ground colour, streaked with golden-bronze.

Chrysanthemum Aldyth.—The colour of this decorative variety is bright, rich crimson, with buff reverse. The shape is very good.

Chrysanthemum Lynette.—A magnificent, white decorative variety of large size, with broad reflexing florets. This and the above two varieties were shown by Messrs. Cragg, Harrison, and Cragg.

Chrysanthemum Envy.—A variety of very excellent form; the colour is bright crimson, the disc being surrounded with a yellow zone. The florets are large and pointed at their tips.

Chrysanthemum Challenger.—This is a very pleasing single flower of fine shape, with broad florets. The colour is rich chestnut-red, of a shade similar to that of Bridgewater Absolute. This and the above variety were shown by Mr. J. Barrell, Bridgewater.

Chrysanthemum Sportsman.—A large-flowered single, measuring about six inches across and possessing six rows of petals. The colour is a unique shade of Indian-red with a slight rose-purple flush. Shown by Mr. H. Shoesmith, Guildford.

Chrysanthemum Mr. J. Barrell.—A single variety with broad florets and conspicuous yellow centre. The colour is rich chestnut-red. Shown by Messrs. Keith Luxford and Co., Harlow.

Chrysanthemum Mrs. R. Jinks.—A medium single flower of apricot-buff colour, and a greenish-yellow ring around the central disk. Shown by Mr. W. Jinks, Upper Tooting.

Groups.

Messrs. Stuart Low and Co. had a group of miscellaneous flowering greenhouse plants, amongst which well-flowered Cyclamen figured conspicuously. Acacia platyptera, Olearia ramulosa, a very dainty species with feathery foliage and white flowers. Winter-flowering Begonias in choice variety were also shown by this firm, as was also a collection of perpetual-flowering Carnations which occupied one end of the exhibit (Silver Banksian Medal).

Circe, Saffron, Tarzan, and Spectrum, the last a bright scarlet flower, were a few of the varieties of Carnations shown by Mr. C. Engelmann (Bronze Banksian Medal), while Messrs. Allwood Bros. showed the new variety Shot Silk; with Edward Allwood, Laddie and Master Michael Stoop, bright cerise, a flower of good form and size (Silver Banksian Medal).

Mr. J. J. Kettle exhibited a number of highly fragrant Violets, which included Princess of Wales, Princess Mary, Gloire la Burghe la Reine, among the dark violet shades, and Mrs. J. J. Kettle, a double light-blue flower, with white centre, and Compte de Brazza, a charming white variety (Bronze Banksian Medal). Violets were also shown by Mr. B. Pinney, who staged good flowers of the new Tiny Whittaker. The variety Princess of Wales, of very fine quality, was exhibited by Miss E. Heathcote (Bronze Banksian Medal).

One of the features of the show was a display of dried ornamental grasses and everlasting flowers, exhibited by The French Intensive Gardens. Colour was given to the group by large bunches of Rhodanthe maculata and Helipterum Manglesii, pink; H. Humboldtiana and Helichrysum lanatum, yellow, and Statice sinuata and Echinops Ritro, blue. Some exceptionally pretty grasses were Chloris (Macrostachya) lanuginosa, Lagurus ovatus, Hordeum jubatum, Agrostis pulchella and Eragrostis namaquensis (Silver-Gilt Banksian Medal).

Messrs. Keith Luxford and Co. staged a pleasing group of Chrysanthemums, particularly rich in single varieties. These included Nona, a white flower of good form; Mrs. W. E. Hutchinson, orange and yellow; Esme Waters, yellow; Sheila, bright crimson, and Chloe, a new variety of a rich shade of rose-purple. Japanese varieties were represented by magnificent flowers of Thomas W. Pockett, pink; Sulphur Queen, yellow; and Mrs. Arthur Brown, white (Silver Banksian Medal). Close by Messrs. W. Wells and Co. arranged a bright display of the Japanese varieties, Louisa Pockett, which takes on a shell-pink tone when grown from a late bud; Edith Cavell and Mrs. Gilbert Drabble. R. Hooper Pearson, Golden Butterfly, and November Sun, were three decorative varieties of more than ordinary merit, and the best single flowers were Bernard Hicks, crimson, Robert Collins, gold, flushed orange, and Nona, white (Silver Banksian Medal).

Very choice Chrysanthemums were shown by Messrs. Cragg, Harrison and Cragg, and the newest varieties were Lynette, a fine white decorative; Isolde, bright pale yellow shaded with buff; Annette, a rich, orange-yellow single; and Yellow Jewel, a deep yellow sport from Merstham Jewel (Silver Banksian Medal). Mr. A. G. Vinter showed Chrysanthemums of good quality arranged in fancy wicker-work baskets and the chief varieties were Golden Glory, Jean Pattison, and Framfield Orange amongst decoratives; and Lady St. Audries, scarlet-crimson; Bridgwater Absolute, crimson; Mrs. A. Robertson, pink, and Mrs. T. Hancock, apricot-buff, among the single varieties (Silver Banksian Medal). Mr. F. G. Wood showed a small group of Chrysanthemums in front of which the "Marsden" Alpine Gardens suitable for table decorations were displayed.

Gentiana sino-ornata and Schizostylis coccinea Mrs. Hegarty, a bright rose-pink, were exhibited by Mr. Clarence Elliott. The Misses Hopkins showed a small rock-garden exhibit.

A display of dwarf Conifers in pots, suitable for rock-garden decoration, was staged by Mr. George G. Whitelegg, including Pinus montana Mughus, a prostrate-growing shrub common in the Eastern Alps; Picea excelsa pygmaea, and the golden-leaved Retinospora pisifera aurea. Specimens of topiary work in Box and berried Skimmias were also shown in this exhibit (Silver Banksian Medal). Mr. J. Klinkert showed trained specimens of Box in pyramid and ball shapes.

Fruit and Vegetable Committee.

Present: Messrs. J. Cheal (in the Chair), W. Poupart, P. C. Veitch, Geo. F. Tinley, P. D. Tuckett, W. F. Giles, A. Bullock, E. Beckett, G. Kelf, W. Pope, H. Markham, W. Bates, E. A. Bunyard, A. N. Rawes, and A. C. Smith.

Amongst the new fruits submitted for Award, the variety, Barnack Orange (Barnack Beauty × Cox's Orange Pippin), shown by Mr. W. H. Divers, was recommended for trial in the commercial varieties of fruits at Wisley.

Messrs. Sutton and Sons were awarded a Silver Knightian Medal for an exhibit of Kales. The collection comprised most of the types in cultivation, from the smooth-leaved Asparagus and purple-stemmed Cottager, to the densely-crested Tall-Curled and Extra Curled Scotch varieties. The last are amongst the most valuable. Veitch's New Sprouting is a valuable Kale for its tender side shoots. Ragged Jack has deeply-incised leaves, and of the ornamental type the most notable were The Sutton variegated strains.

Messrs. J. Carter and Co. displayed some fifty varieties of Potatos, for which a Silver-Gilt Knightian Medal was awarded. The exhibit was one of the most attractively-staged groups of Potatos we have seen; Olive-green velvet was used to drape the table, this being in good taste. The use of small, mahogany-coloured baskets was very pleasing. Notable varieties were Express, Edinburgh Castle, The Bishop, Kerr's Pink, Majestic, Di Vernon, Golden Wonder, and Arran Victory.

Messrs. Geo. Bunyard and Co., Ltd., exhibited varieties of Apples, representing some of the best sorts in season, such as Egremont Russet, Allington Pippin, Charles Ross, Mother, Ribston Pippin, Lane's Prince Albert, Cox's Orange Pippin, and Belle de Boskoop. There were also two excellent baskets of Pears of the varieties Beurré Diel and Beurré Alexandre Lucas.

NATIONAL POTATO.

The Junior Training Hall, Leicester, was the *venue* this year of the annual show of the National Potato Society of Great Britain and Ireland, which took place on November 13, 14 and 15, and was held in conjunction with the horticultural exhibition of the County of Leicester Education Committee and the Leicester and Leicestershire Chrysanthemum and Fruit Society.

The Potato exhibits, considering the adverse season, were of a very high standard, and competition was keen throughout the many classes.

During the evenings of the first and second day lectures were delivered by Mr. F. J. Chittenden, Mr. William Cuthbertson, and Dr. George H. Pethybridge.

In the open single dish classes for first early varieties, Mr. John Kimmer, Cadishead, was first for the varieties May Queen, America or Ninetyfold, and Witch Hill, Snowdrop or Resistant Snowdrop; Mr. John Hudson, Leicester, excelled with Epicure; Mr. W. Coleman, Buckingham, led with Harbinger; Mr. F. Ashley, Irlam, with Sharpe's Express or Colonist; and the Earl of Lanesborough, Loughborough, with Duke of York, Midlothian Early, Victory, or New Success. The Rev. C. G. Kean, Weybridge, showed the best dish of Di Vernon; and Mr. R. A. Grigor, Dumfries, exhibited the premier dish of any other white first-early variety not included in the above list.

The best dish of Katie Glover was shown by Mr. J. Kimmer in the section devoted to second-early varieties, and the same exhibitor also secured the principal awards for Boston Kidney or Dargill Early, Sir John Llewelyn and King George; while Mr. W. Coleman was first for Edinburgh Castle or Warwick Castle, and Arran Comrade. Other first prize-winners were Mr. G. Ashley, with Ally; Mr. J. Hudson, with Great Scot; Miss Burton, Polton, with British Queen or types of this variety; and Mr. John Papworth, with any other second-early variety not included in the above classes.

There were fifteen classes in the section devoted to mid-season and main-crop varieties. Mr. J. Kimmer was awarded first prizes for the best dishes of New Renown, Bishop, Arran Chief, Abundance or its types, and Crimson Kidney, Edgecote Purple, or Queen of the Veldt. Mr. W. Coleman won first prizes for the varieties Up-to-Date or types, Tinwald Perfection, White City, Rhoderick Dhu and Majestic. Mr. E. Whitehouse, Cannock, led with the best dish of Goldfinder, Mighty Atom or Prosperity, and Mr. J. L. Armstrong, Dumfries, secured the highest award for Langworthy. The first prizes in the classes for Ben Cruachan, Crusader, and for any white maincrop variety immune to wart disease, distinct from and not included in the above classes, were gained by Mr. R. A. Grigor, while for a dish of a non-immune white variety, Mr. J. Hudson secured the first place.

For single dishes of coloured varieties, the Earl of Lanesborough was first for King Edward, and Mr. W. Coleman led for Lockar or Templar, and Shamrock, Flourball, Irish Queen or Arran Victory. Mr. C. Hughes, Cannock, showed the best dish of Kerr's Pink, and Mr. John Kimmer the prize-winning dishes of Catriona and any other coloured kidney variety not mentioned in the above list. Mr. John Papworth, Thorney, was likewise first for a coloured round or oval-shaped variety not specified in the list.

The collections of Potatos were particularly interesting, and of more than average merit. For twelve dishes in distinct varieties, Mr. W. Coleman was placed first, and he was also successful in the classes for six distinct immune varieties and for three non-immune varieties. Mr. J. Kimmer scored in the classes for six dishes, distinct non-immune varieties, and the Earl of Lanesborough carried off the premier award for three dishes of immune varieties.

Mr. John Watson, Ashwell, Mr. W. Coleman, Mr. E. B. Breater, Birmingham; Mr. E. Whitehouse, and Mr. C. J. Bailey, Ecclesfield, were the principal first prize-winners in the section restricted to *bona fide* allotment holders and amateur gardeners.

Four classes were set aside for *bona fide* farmers and market gardeners, and Messrs. D'Alcorn and Son, Spalding, showed the best one-cwt. bag of a white round or oval Potato as dressed for market. In a similar class for a white kidney, or cylindrical variety, Mr. John Cock, Spalding, was first, while in the classes for the best bag of a coloured round or oval variety, and a coloured kidney or cylindrical variety, Mr. Frederick Ashley, Irlam, and Mr. T. J. Wright, Scunthorpe, were respectively awarded first prizes.

There were a number of trade groups and to the following medals were awarded:—

Large Gold Medal.—To Messrs. J. Carter and Co., and to Messrs. Ed. Webb and Sons, Ltd.

Gold Medal.—To Messrs. Dobbie and Co.

Small Gold Medal.—To Messrs. Kent and Brydon, Ltd.; Mr. John Cock, and Garden Supplies, Ltd.

Bronze Medal—To The Chase Continuous Cloche Co.

KINGSTON, SURBITON AND DISTRICT CHRYSANTHEMUM.

The annual show of the Kingston, Surbiton and District Chrysanthemum Society was held in the Assembly Rooms, Surbiton, on Wednesday, November 12, and it was very unfortunate that the function was marred by dismal weather.

The Silver Trophy, valued twenty-five guineas, presented by the tradesmen of Kingston, was on this occasion won outright by Mrs. Bond (gr. Mr. S. Pead), Croylands, Surbiton, in the principal open class for eighteen Japanese blooms, in six distinct varieties. The quality of the flowers aroused the admiration of all, and it was the opinion of the judges that never before had such fine blooms been exhibited at this show. The varieties shown were Mrs. Gilbert Drabble, Princess Mary, Louisa Pockett, Mrs. Peter Murray, General Petain, and Mrs. B. Carpenter. The only weakness was a bloom of the last-named variety which was of a decidedly light colour. The Lord Wandsworth Agricultural College (gr. Mr. E. H. Pearce), Basingstoke, the other competitor, followed a close second, and his flowers of Mrs. B. Carpenter (of excellent colour), Majestic, and Mrs. R. C. Pulling, were of outstanding quality.

For twelve Japanese blooms, distinct, to be shown on boards, Mrs. Bond again excelled, and the varieties Mrs. R. C. Pulling, Louisa Pockett, Wm. Rigby, and A. F, Tofield were shown in excellent condition. The Lord Wandsworth Agricultural College was second, and Mrs. A. C. Howeson (gr. Mr. Cannon), Manor House, Ditton Hill, third.

There was no exhibitor in the class for a group of single Chrysanthemums, the first prize in which included a silver cup presented by the President. Lady Julia Trever (gr. Mr. Weaver), Coombe Lodge, Kingston Hill, was accordingly asked to hold the trophy for one year as a recognition of her splendid non-competitive group of single blooms.

G. C. Hodgson, Esq. (gr. Mr. Belfield), Pinehurst, Surbiton, was first in the class for a semi-circular ground group of single Chrysanthemums in pots arranged in a space seven feet by five feet. For three bush Chrysanthemums, and for six specimens of varieties belonging to the Caprice de Printemps family, Mrs. Bond was awarded first prizes for well-grown plants. Mrs. A. C. Howeson was second prize winner in these three classes.

Mr. C. Wildman, St. Margarets, Twickenham, scored in the class for nine Japanese blooms, and Mrs. Bond was first with six Japanese blooms of varieties introduced since 1921. The last named competitor also won first prize in the classes for three white Japanese and three yellow Japanese blooms, showing perfect flowers of Louisa Pockett and Princess Mary respectively. The varieties Majestic and Mrs. B. Carpenter gained the first prize for Mrs. A. C. Howeson in a similar class excluding white and yellow varieties. G. C. Hodgson, Esq., had the winning exhibit in the class for six distinct Japanese varieties, and Mrs. A. C. Howeson in that for twelve Japanese blooms, distinct.

Chief honours again fell to Mrs. Bond in the class for six vases of single Chrysanthemums, and the varieties Molly Godfrey, Isabel Felton, Audrey, and Reginald Godfrey were particularly fine. Mrs. A. C. Howeson was second.

In the section devoted to pot plants, fruit and vegetables, Mr. Bond was first in the class for six plants suitable for table decoration, and Mrs. Howeson was the most successful exhibitor in the classes for six Chinese Primulas, six winter-flowering Begonias (the specimens in this class being of an exceptionally high quality), three bunches of Grapes, and four dishes of Apples.

G. N. Hunter, Esq. (gr. Mr. Mercer), Longmore, Kingston Hill, secured the first prize for a group of six distinct kinds of vegetables, and in the section devoted to single-handed or jobbing gardeners, Messrs. C. H. Bone, Teddington; C. Hawkins, Kingston Hill; C. Morris, Thames Ditton; and B. A. Barrett, Thames Ditton, were the principal prize winners.

Mrs. Bond showed the best bloom in the open classes with a magnificent specimen of Louisa Pockett, and a similar award was gained for Mr. C. Hawkins in the amateur section with a fine bloom of Majestic.

Mr. H. C. Gardener, Claygate, displayed some sixty dishes of Apples and Pears as a non-competitive exhibit.

CARDIFF AND DISTRICT GARDENERS'.

At the Chrysanthemum meeting of the above association on November 4, some fine types of the decorative class were shown. The Harry Gillett Silver Cup was won outright by Mr. W. Webber, who was very closely followed by J. E. Turner, Esq. (gr. Mr. A. H. Cossam) and Mr. H. Edwards.

A lecture on "Problems of Insect Pest Control" was delivered by Mr. H. W. Thompson, M.Sc., Advisor in Agricultural Zoology. The lecturer briefly indicated the injury caused to plants directly by insects, and such injury generally prepared the way for infection from fungous diseases. Many pests were described and the principal control measures were discussed. It was pointed out that weather conditions often checked the ravages of insect pests, and cultural methods may, in some cases, so upset nature's balance as to create conditions favourable to the increase of plant pests.

In conclusion it was pointed out that the Advisory Department of the University College of South Wales and Monmouth was at the service of gardeners, without charge, in Glamorgan and Monmouth.

ROYAL CALEDONIAN HORTICULTURAL.

The ordinary monthly meeting of this Society was held at 5, St. Andrew Square, Edinburgh, on November 4, Mr. R. Fife, President, in the chair.

Mr. Thomas Anderson, Board of Agriculture for Scotland, gave a lecture on "Variation in Varieties of Potato," and in the course of his remarks he stated that disease played an important part in altering the characters of the Potato, as was shown by varieties submitted to the Board as "new". With reference to "sports", Mr. Anderson said that there seemed to be no agreement as to the definition of these, but he considered that a true sport must be substantive and substantial. Such variations as frequently occurred in the colour of the flower or in the skin of the tuber could not be ranked as sports.

The exhibits were:—Chrysanthemums and Begonias from the Edinburgh Public Parks Department, per Mr. J. T. Jeffrey, Superintendent (Gold Medal); Chrysanthemum Jean Pattison, from Messrs. Wilson and Co., Craigmillar (Silver Medal); collection of Apples from Mr. C. Webster, Gordon Castle, Fochabers (Cultural Certificate); and Chrysanthemums and Dahlias, from Messrs. Dobbie and Co., Ltd., Edinburgh (Cultural Certificate).

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

At the Monthly Meeting of this Society, held in the R.H.S. Hall, on Monday, November 10, Mr. Chas. H. Curtis presided. Seven new members were elected; two members over the age of seventy years withdrew £42 0s. 9d. from their deposit accounts, and the sum of £39 18s. 8d. was passed for payment to the nominee of one deceased member.

The sick pay for the month on the private side came to £79 13s. 11d., on the State side to £70 2s. 0d., while maternity claims totalled £4. The sum of £23 0s. 1d. was granted to five members from the State Section for dental treatment, and four other cases were considered. The Trustees were empowered to invest the sum of £1,000.

ANSWERS TO CORRESPONDENTS.

Book on Pansies, Violas, and Violets: *W. J. W.* The most recent book dealing with these flowers is the one edited by Mr W. Cuthbertson, and entitled *Pansies, Violas, and Violets.* It is out of print, but if you enquire of some of the leading second-hand booksellers in London you may be able to procure a copy. As you are desirous of making a collection of these plants, we should advise you to communicate with Messrs. Dobbie and Co., Edinburgh, Messrs. Carter Page and Co., London Wall, or Mr. W. Yandell, Maidenhead, as these firms specialise in these plants and would doubtless give you every assistance.

Cordyline (Dracaena) Parrei: *A. B.* Cordyline Parrei is a variety of C. australis and in our experience is less hardy than the type, which itself is only hardy in the extreme south of England and one or two other favoured places. We consider therefore you would run a very great risk to allow C. Parrei to remain out-of-doors all the winter in Nottingham.

Gardeners Notice; *G. B.* It has been held by the High Court that in the absence of any special agreement as to notice in the terms of employment a head gardener is entitled to one month's notice or one month's wages in lieu of notice. You should give up possession of the lodge at the expiration of such notice. If you do not do so your employer can take ejectment proceedings in the local County Court.

Fumigating a Vinery with Hydrocyanic Gas: J. *G.* All foliage and flowering plants should be removed from the vinery before fumigation commences, otherwise they will probably suffer injury if the following instructions are carried out. Potassium cyanide or sodium cyanide may be employed; sodium cyanide is cheaper and just as effective. For every two hundred cubic feet of space use one ounce of sodium cyanide. Sulphuric acid is required to liberate the gas, and to every ounce of sodium cyanide you will require one-and-a-half fluid ounce of acid and five fluid ounces of water. The operation of fumigating with this deadly poison should be carried out by a careful person to avoid risk of accidents. All crevices of the house should be closed up and made as air-tight as possible. The temperature of the house should not be over 60° F., and it is necessary to see that the atmosphere and the soil are dry. Place the correct amount of water in an earthenware jar—or if the vinery is large a number of jars may be used, in which case they should be placed equi-distantly about the house. Add the acid and stir well. When the solution has cooled the correct amount of cyanide should then be dropped into the jar. Safety cyanide packages may be obtained from horticultural sundriesmen, and their use is to be commended to the inexperienced. Full instructions as to use accompany the packages. Should they not be employed then the cyanide must be wrapped in a piece of cotton-gauze and tied round with string, passing the end of the string through a hole in the wall or through the roof of the house, arranging so that it is suspended just over the jar of acid and can be lowered from outside. Fumigation is best performed in the evening and the doors and ventilators should be opened wide the next morning and a few hours allowed to elapse before entry is made. A second fumigation should be made after an interval of about a fortnight.

Communications Received.—W. R. C.—F. H.—S. E. A., Yorks.—Ride.—W. R. B.—G. L.—D. W.—F. W. J.—F. W. S.—M. G. K.—W. L.—C. A. M. A. G.—E. M. W.

THE

Gardeners' Chronicle

No. 1979—*SATURDAY, NOVEMBER* 29, 1924

CONTENTS.

Alpine garden—
  Antirrhinum Asarina 368
  Cyananthus 368
  Rosmarinus officinalis prostrata 368
Annuals for greenhouse and conservatory decoration 371
Arum Lilies out-of-doors 367
Bog garden—
  Saxifraga peltata ... 368
Books, notices of—
  Gardening in Sunny lands 374
  Pollen, the vitality of dried 364
  Soils and Crops ... 374
Cambridge Botanic Garden... 363
Ceylon, a hill-garden in 372
Development Commission, the 364
Fruit register—
  Peach Thames Bank 375
"Gardeners' Chronicle" seventy-five years ago 365
Gardeners' examinations 373
Gardeners' of to-day, young 377
Greenhouses, the heating and ventilating of ... 377
Guildhall, the 363
Hardy fruit garden—
  Peach trees at Wrotham Park, Barnet 375
Indoor plants—
  Humea elegans ... 371
  Kaempferia rotunda 371
Ken Wood 363
Lonicera nitida 377
Nursery notes—
  Carnations at Bush Hill Park 376
Orchid notes and gleanings—
  Odontoglossum Reve d'Or 370
  Orchid hybrids ... 370
  Orchis hircina 370
Parks and gardens, public 377
Pernettyas 377
Potato trials in Ayrshire 364
Roses, die-back disease of Rambler 374
Self-Sterility 364
Societies—
  Birmingham Chrysanthemum 379
  Blackpool and Fylde Horticultural ... 378
  Gardeners' Royal Benevolent Institution 381
  Hitchin Chrysanthemum 378
  Lancaster Chrysanthemum 378
  National Dahlia ... 379
Spraying of Apple trees, the 363
Sweet Peas, height of 377
Trees and shrubs—
  Dendromecon rigidum 369
  Erica ciliaris 369
  Escallonia exoniensis 369
  Gaultheria trichophylla 369
  Lonicera pileata var. yunnanensis ... 369
Vegetable garden—
  Raising vegetables under glass ... 375
Week's Work, the ... 366

ILLUSTRATIONS.

Chrysanthemum Envy 365
H.R.H. The Prince of Wales, portrait of 364
Lonicera pileata, var. yunnanensis 369
Peach Rivers's Early York at Wrotham Park, Barnet, a fine specimen of 375
Richardias (Arum Lilies) flowering out-of-doors in Staffordshire 367
Roehampton, Ceylon: views in the gardens at, 371, 372, 373

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 41·1.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday November 26, 10 a.m.: Bar. 29·4 temp. 45°. Weather, dull.

The Spraying of Apple Trees.

The more we learn about the effects of spraying and controlling the attacks of insects and fungi on Apples, the less inclined we are to generalise on the subject. There are growers—including some of the best and many of the worst—who do not spray at all. The former have tried it and given spraying up ; the latter have never bothered about it. Yet in unsprayed orchards good crops are sometimes grown. It is certain that aspect, soil conditions, varieties and cultivation all count in determining whether a given plantation is to remain reasonably immune from attack ; and it may be that the happy dwellers in such places need not take the additional precaution of spraying their trees. Nevertheless, the majority of growers must continue, like Martha, to be vexed and troubled over many things, and not the least the loss caused by scab and other fungous attacks and by insect pests. This year, for example, in those orchards we have seen, there was not one tree of Cox's Orange Pippin entirely free from scabbed fruit. If, therefore, the average grower must make up his mind to spray, the questions to be considered are the time at which spraying should be done and the nature of the spray to be used. Messrs. Grubb and Bagenal, who are carrying out in Kent a joint programme of work in this subject—arranged between the East Malling Research Institute and Messrs. Salmon and Goodwin of the South-Eastern Agricultural College, Wye—have investigated the effects of various sprays on scab and incidentally on the control of insect pests also. Of the sprays used—lime-sulphur, one to nineteen, and Bordeaux mixture (10—10—100) with and without lead arsenate, four lbs. per 100 gallons—lime sulphur, when applied on April 20, a few days before the blossom opened, reduced the amount of scab from twenty per cent., on control unsprayed trees, to nine per cent. The Bordeaux mixture reduced it more, and when mixed with lead arsenate the reduction of scab was yet greater. It was found that when applied in two successive sprayings after blossoming, lime-sulphur (1 to 29) mixed with lead arsenate, was effective in reducing scab. An interesting effect of spraying on the size of fruits is noteworthy. Lime-sulphur (1 to 29) applied after the blossoming of Apples is apt to cause a heavy drop of small fruits and to reduce the total crop. Weak lime-sulphur (1 to 99) or Bordeaux mixture applied after blossoming had no such effect. On the other hand, the setting of fruits was favoured by the addition of lead arsenate, both in the case of lime-sulphur and in that of Bordeaux mixture. The effect, when spraying is done after blossoming, is apparently due to the destruction of larval Sawflies. Finally, it was noted that the use of Bordeaux mixture has a definite effect on the size of the fruits ; the trees sprayed with this substance before blossoming, not only yielded a heavier crop, but the individual fruits were larger. Largeness of fruit was also conspicuous on the trees sprayed with Bordeaux mixture after blossoming, but in this case it happened that the crop itself was light. There would appear, therefore, to be no doubt but that Bordeaux mixture does lead to increased growth of the fruit—an effect comparable to that which it produces in Potatos, for, as is well known, spraying with Bordeaux mixture leads to a marked growth of haulm and also of tubers. The general conclusion from these observations would appear to be that Bordeaux mixture (10—10—100) with four pounds of lead arsenate to the hundred gallons, applied just before the blossom opens, is an excellent spray to use for Apples.

Reversion in Black Currants.—The experience gained by research workers of the East Malling Research Station,* who are investigating reversion in Black Currants, shows that rogueing plantations twice, once when the bushes are coming into blossom and once when they are making their main root growth in July, permits of this serious disease being kept under control. By rogueing nursery beds any plants which have escaped these rogueings may be eliminated .

Presentation at Wisley.—Mr. C. Gosden, who for a number of years has been in charge of the rock garden at Wisley, has recently vacated this post to take on the duties of head gardener to A. Arbuthnot, Esq., Sinah Warren, Hayling Island. In carrying with him the good wishes of his co-workers at Wisley he was made the recipient of two suitably-inscribed gifts—one, a silver cigarette case, presented on behalf of the staff by Mr. W. J. Dowson, M.A., and the other a barometer, which was a gift from the students, the presentation being made by Mr. Baker.

The Guildhall.—This historic building in the City of London, in which the Annual Festival Dinner of the Gardeners' Royal Benevolent Institution, was held on Tuesday last, has for long been identified with civic conclaves and banquets of the Corporation. The original building, of which parts still exist in the outer walls and crypt, was damaged in the Great Fire of London. The Guildhall was rebuilt by Dance in 1789, and includes, besides the Great Hall—in which the banquet was held—the Common Council Chamber, the Aluermen's Room, and several Courts of Justice. The roof and general architecture of the Great Hall is very imposing, and at one end is a gallery containing the city giants, Gog and Magog. The band of the Royal Artillery occupied this gallery during the dinner and rendered a selection of beautiful music throughout the evening.

Ken Wood. — The negotiations for the acquisition of a portion of the Ken Wood estate, Hampstead, for public use, to which we have referred in previous issues, have been concluded ; an area of one hundred and twenty acres has been purchased by subscriptions and the land vested in the London County Council. Whilst it is to be regretted that the Committee has been unable to raise a sufficient sum to purchase the whole of the two hundred and twenty acres of the Ken Wood estate, the greater portion will be preserved for the public use, and will contribute to the full enjoyment of Hampstead Heath and Parliament Hill Fields by the public. The beautiful view from the summit of Parliament Hill has been saved, and it is to be hoped that means will be found to prevent any possibility of the remaining portion being devoted to building purposes. This beautiful park and woodland will increase the total area of Hampstead Heath to eight hundred and four acres, and the whole will constitute one of the finest public places of its character in the neighbourhood of London. The total cost of the open space known as Hampstead Heath, including the three hundred acres constituting Parliament Hill Fields and the Ken Wood portion, amounted to £577,000. Ken Wood, which was originally designated Caen Wood, after the family estate of William the Conqueror in Normandy, was bestowed by William I. on the Bishop of London. The Priory was surrendered to Henry VIII. in 1531, and subsequently the estate passed into the possession of various owners until it was acquired by Lord Chief Justice Mansfield. It will be some considerable time before the public will have access to their new recreation ground, for there is much work to be done in draining, fencing, and making foot paths before it can be converted to the use for which it has been purchased.

Cambridge Botanic Garden.—The Cambridge Botanic Garden Syndicate reports that, with the aid of a further generous gift from Mr. Reginald Cory, it is proposed to provide a house for the Director of the garden.

A Linnean Museum in Upsala.—A Linnean Museum has recently been opened in Upsala, Sweden, in the old greenhouse of the restored Linnaeus Gardens. It comprises, among other exhibits, Linnaeus' furniture, his table China, a service he obtained from China with specimens of Linnaea borealis—which came quite safely so far as Gotenburg, but was badly smashed on the way thence to Upsala —and the silver bowl he used for Strawberries, which he used to say resembled the Elixir of Life. Some of his linen, and even his razor, are carefully preserved ; the old-fashioned house is so full of eighteenth century objects, and so suggestive of the great botanist that one almost expects to see his figure, as formerly, hovering about among the specimens of the old herbarium.

---

* *Annual Report*, 1923.

Fruit Prices in Germany.—In the Pillnitz (Saxony) district this year the fruit harvest was so abundant that prices fell to an excessively low figure. Pear growers, being offered only a pfennig (less than a half-penny) a pound for their fruit, preferred to use it as cattle food; good, large Apples realised only four to six pfennigs, and best quality Williams' Bon Chrêtien Pears were sold for fifteen pfennigs, while they were disposed of in Dresden for double the price. Private growers allowed their early Pears to rot on the trees, being offered only two pfennigs a pound for them.

The Vitality of Dried Pollen.—The preservation of pollen by drying has often been suggested and occasionally tried. Recent experiments by A. Manaresi* appear to demonstrate that pollen of fruit trees may be preserved for months if kept in a dry atmosphere, as for example, in a closed vessel containing calcium chloride. Apple pollen kept in this way remains viable from one hundred and forty.three days to one hundred and eighty-three days, whereas if kept in ordinary air it loses its power of growing after forty-eight or even fewer days. Dried pollen of Pears lasts from ninety-seven to one hundred and twenty-seven days, whereas it dies in ordinary air within twenty-seven days, and so on. for other fruits except European Vines, the pollen of which, even if kept dry, is useless after a few days.

Potato Trials in Ayrshire.—The results obtained in the cropping experiments on the Demonstration Area at Hunterston Farm, West Kilbride, are now available, and the figures relating to the weight of the individual crops of late varieties indicate in a remarkable manner, the beneficial effects of systematic liming. The comparative yields per acre over all the plots (limed and unlimed) were as follow:—Arran Chief, 10 tons 15 cwts. 3 qrs.; Rhoderick Dhu, 10 tons 12 cwts. 3 qrs.; Kerr's Pink, 10 tons, 3 cwts. 1 qr.; Arran Victory, 8 tons 8 cwts. 2 qrs. The seed sets were boxed, except in the case of Arran Victory, which partly explains the lower yield of that sort. The results of the different forms of lime on Kerr's Pink were:—Waste lime, 12 tons 18 cwts. 3 qrs.; ground lime, 12 tons 13 cwts. 2 qrs.; ground limestone, 9 tons 9 cwts. 3 qrs.; no lime, 5 tons 10 cwts. 3 qrs. Much better and smoother-skinned tubers were obtained on the limed than on the unlimed plots, but the varieties differed in their tolerance of the lack of lime. In the manurial tests, the advantages of lime were likewise proved. Where wrack was applied in combination with lime the yield was 9 tons 13 cwts. 2 qrs., as compared with 6 tons, 3 cwts. 1 qr. on plots that received wrack and no lime, while manured and limed soil produced 8 tons 7 cwts. against 4 tons 19 cwts. on ground that was treated with manure only. In each case home-mixed manures proved as effective and much less costly than the purchased compound. Similar experiments which had been made on the crops of early varieties of Potatos also showed that subsequent crops had benefited by the lime treatment. Catch crops, such as Rape, Italian Ryegrass, and Kale, were superior on the waste lime and ground lime plots, and very poor on the unlimed plots, while very few Turnips grew on the unlimed sections.

Bacterial Leaf-Spot of Delphinium.—The leaf-spot disease of Delphinium, although it does not appear to be very common in this country, is so serious a pest in the northern United States that many have had to give up growing Delphiniums. The disease presents itself as tarry, black areas of irregular shape and size, which occur on the upper side of the leaves. The most recent investigations* made by Mary K. Bryan, Assistant Pathologist to the United States Department of Agriculture, confirm and add to the conclusions as to nature of the causal organism (Bacterium delphinii) made by Dr. Erwin Smith some years ago. The bacteria, which are the motile, gain access to the leaves through the stomata, and may attack not leaves only but also the stems and flowers. In as much as the Bacterium delphinii is resistant to low temperatures, it appears likely that it survives in the soil and reinfects plants in the spring. It is, therefore, recommended to destroy all decayed and withered leaves and to protect the plants by spraying with Bordeaux mixture.

A New Primula.—*The Transactions and Proceedings of the Botanical Society of Edinburgh* contains an illustration and description of Primula Pauliana, a new Chinese species collected by Mr. George Forrest in south-west Szechwan, Western China. It belongs to the Geranioides series and is apparently the only yellow-flowered member of that section. The inflorescence forms a long, lax, recemose spike which is said to be an easy mark of recognition of the species. The plant flowered in the Royal Botanic Garden, Edinburgh, in July and August, and it is stated that it is likely to be of considerable horticultural value.

Photo G. F. W. Swain.

H.R.H. THE PRINCE OF WALES, K.G.,

Who presided at the Seventy-ninth Anniversary Dinner of the Gardeners' Royal Benevolent Institution. (see p. 381).

The Development Commission.—The report of the Development Commission for the year ending March 31 last, shows that the total advances recommended by the Fund during the year amounted to £480,681, as compared with £511,577 in 1922-23. A great deal of this money was expended in assisting agricultural research and education, the total of the sums recommended for these purposes in the year amounting to £372,156. Of this sum about £134,000 was allotted to the research institutes. The Intelligence Service of the Fund, for the special purpose of advising on technical and economic questions affecting rural industries, dealt with some two thousand enquiries and issued thirty thousand pamphlets dealing with the practical aspects of various country industries. With regard to the question of increasing the home food supply, the report states that this can only be done by increasing the area under cultivation or by improving the skill of the grower, and in this latter respect the report states it is imperative that agricultural education in this country should be advanced.

Royal Society of Arts.—In the syllabus of papers to be read before the members of the Royal Society of Arts after Christmas, we find that the Sir George Birdwood Memorial lecture will be delivered by Lt.-Cot. Sir David Prain, whose subject will be "Government Botanical Gardens."

The Aphididae of Great Britain.—A work of great importance on *The Aphididae of Great Britain* has been completed by Professor F. V. Theobald, and it is greatly to be regretted that the same has not yet appeared in print because of the insufficient number of subscribers. No group of insects is so important to horticulturists in this country. Such a work has been sorely needed for a number of years. Professor Theobald is known the world over as the authority on these insects, and although it may seem a far cry from the fruit-grower who has an attack of green-fly to a monograph of a scientific nature, it will not be until we have the scientific facts that we shall be able to attempt to control green-fly. Volume I contains a general account of the family and genera of Macrosiphina, including Macrosiphum, Macrosiphoniella, Megoura, Amphorophora, Myzus, Capitophorus, Idioptera, Phorodon, Rhopalosiphoninus, Pentalonia, and Hyalopteroides. It extends to four hundred pages, and includes one hundred and eighty-six illustrations. The price of each volume is £1 5s., and as soon as sufficient subscribers have been found Volume I. will be issued. Only eighty more subscribers are required, and surely the immense horticultural industry of this country can find this additional number. Intending subscribers for Volume I of the *Aphididae of Great Britain* promising to pay £1 5s. on receipt of the volume, are requested to communicate with Professor F. V. Theobald, M.A., Wye Court, Wye, Kent.

Self-Sterility.—The sterility exhibited by certain plants when pollinated with their own pollen is doubtless due to different causes in different cases. In some plants self-sterility, as suggested by Professor East, is due to the growth of the pollen tube being so slow that the flower withers before the pollen tube has had time to reach the pollen-ovary. Experiments of Messrs. Anderson and Smith, of the Missouri Botanic Gardens, summarised in the *International Review of Agriculture* (No. 3, Vol. II) indicate that this is the cause of self-sterility in certain species of Nicotiana. The authors investigated the problem of pollinating flowers in the unopened bud stage. In the case of N. alata and hybrids between it and N. Forgetiana, they obtained seed in sixty-eight per cent. of the pollinations of unopened buds, whereas when the first opened flowers were pollinated seed was obtained in only sixteen per cent. of the pollinations, and no seed at all was obtained by pollinating the second open flowers.

Scottish Railway Station Gardens.—The staffs at 270 stations on the Northern Division of the London, Midland and Scottish Railway have qualified for awards in this year's station garden competition. The lowest of these obtained 98·38 per cent. of the marks possible, and one hundred per cent. was reached in the case of Dubton, Farnell Road, Inches, Newhouse and St. Fillans. The following were given Special Class Premiums:—Alyth Junction, Bridge of Dun, Duror, Kinfauns, Scotstoun, Stobo, Strathpeffer, Newtyle, Achterneed, Colliston, Forfar Passenger, Parton, Woodside and Burrelton, Maxwelltown and Crieff.

---

* *International Review of the Science and Practice of Agriculture.* New Series, II., No. 3,1924.

* *Journal of Agricultural Research,* xxviii, No. 3 1924.

Appointments for the Ensuing Week.—Monday, December 1: National Chrysanthemum Society's Floral Committee meeting. Tuesday, December 2: Royal Horticultural Society's Committees meet; Royal Caledonian Horticultural Society's meeting; Croydon and District Horticultural Society's meeting. Wednesday, December 3; Glasgow and West of Scotland Horticultural Society's meeting; Sheffield Chryanthemum Society's annual dinner; Royal Agricultural Society's meeting. Saturday, December 6: Blackburn and District Horticultural Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Potatos and Salt.*—Last spring I took a bushel of yellow Potatos from among the diseased ones which had still a few good buds left. I put them into water saturated with salt. A pound was used; a larger quantity of water might have been saturated with the same quantity of salt. These tubers were set near other Potatos, not diseased. When taken up I had three bushels of good Potatos and half a bushel diseased. This is a satisfactory result, inasmuch as the good Potatos set in the vicinity were half diseased. In two previous years I had had the same result, and I therefore think myself entitled to assert that the Potato disease may be stopped by soaking the sets in brine. A pound of salt to two bushels is enough; the salt must be dissolved before the Potatos are put in, and the soaking must last for half an hour. *Neumann, Gard. Chron., December* 1, 1849.

Publications Received.—*Cut Flowers for Market.* By F. J. Fletcher. Ernest Benn, Ltd., 8, Bouverie Street, E.C. 4. Price 2/6 net.

R.H.S. MEDAL AWARDS.

CONCERNING the communications received from Mr. W. R. Dykes, the Secretary of the Royal Horticultural Society, and published below, we express our regret that the Council has seen fit to curtail a privilege enjoyed by members of the horticultural press for at least thirty years, and also our opinion that the people who matter most, *i.e.*, the exhibitor and others directly concerned in horticultural matters, have not been "mystified" nor have they been under any misconception regarding the relative value of the Society's Medals.

The Editor,
The Gardeners' Chronicle,
5, Tavistock Street,
Covent Garden, W.C.,
November 24th, 1924.

DEAR SIR,

I am desired by the President and Council to send you the enclosed memorandum on the Medals of the Society in the hope that you may find room for it in your columns.

I was also to draw attention to the fact that in your issue for November 15th there were statements with regard to two Medals actually awarded which were erroneous, owing to the fact that the reporter had quoted from the recommendations made by committees and not from the lists issued by the Council. The Council has made a rule that under no circumstances must the Committee lists be made available to members of the Press, which must await the issue of the lists passed by the Council.

Yours truly,
W. R. DYKES,
Secretary.

SOME misunderstanding seems to exist among exhibitors at Vincent Square as to the various medals that are awarded by the Royal Horticultural Society. The misunderstanding may arise from the fact that about two years ago the Council carefully considered the whole question of the medals and decided to allot them each to a particular purpose and not to award the various degrees of all the different medals indiscriminately.

Three years ago it was possible for the various committees to recommend the award of one or other of no less than ten different medals to any exhibit in the hall. At the top came the Gold Medal and then nine others in the following order:—Silver-Gilt Flora, Silver-Gilt Grenfell, Silver-gilt Banksian; Silver Flora, Silver Grenfell, Silver Banksian; Bronze Flora, Bronze Grenfell, Bronze Banksian.

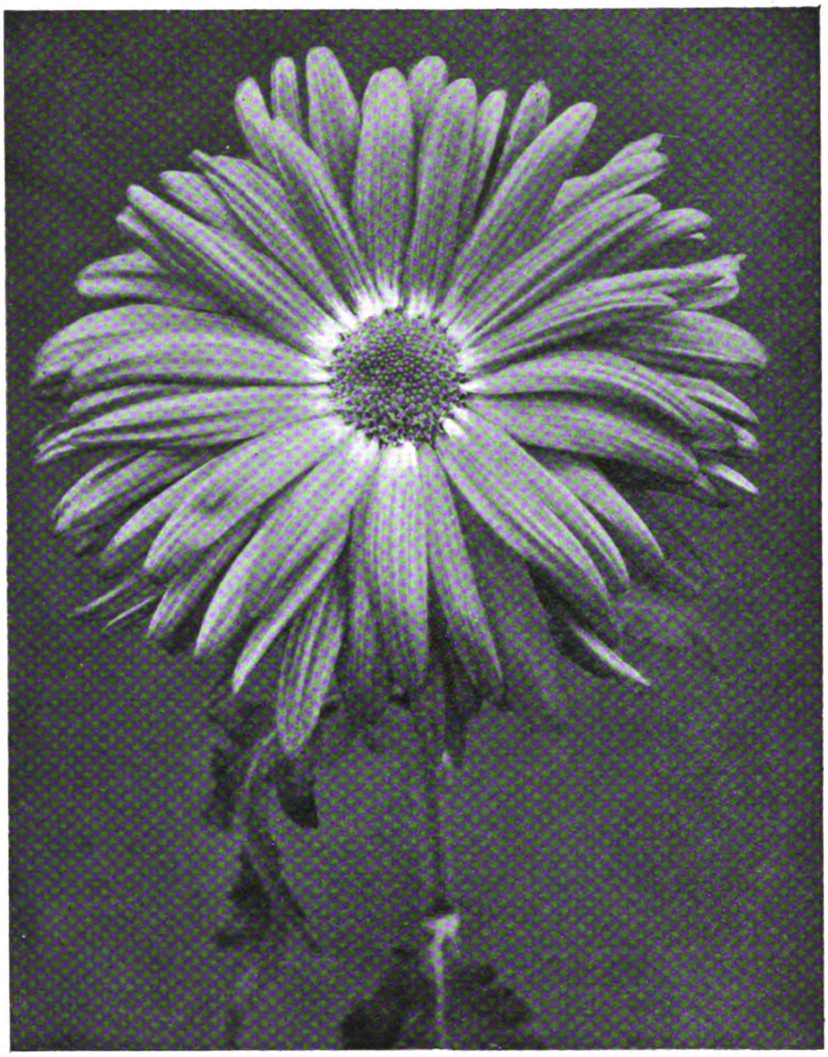


FIG. 132.—CHRYSANTHEMUM ENVY.

N.C.S. First-Class Certificate, November 17; R.H.S. Award of Merit, November 18 (see p. 360).

This multiplicity of medals had two results; the first was that members of the public were entirely mystified and had little or no conception as to the relative value of any of them and, secondly, the Committees got into the way of ignoring the existence of Bronze Medals altogether. The Council decided that for floral exhibits in the Hall at Vincent Square at the ordinary Fortnightly Shows, it was sufficient to have four degrees, and these were to be the Gold Medal and the Banksian, either Silver-Gilt, Silver or Bronze. The Flora Medal was reserved for Chelsea and Holland Park, where exhibits are usually on a more important scale than at Vincent Square. The Grenfell Medal was kept for exhibits of botanical drawings and paintings. In the same way the Hogg and Knightian Medals which had been awarded to fruit or vegetables, were separated, and for exhibits of fruits at Vincent Square there are now four degrees, the Gold Medal and the Hogg Medal in Silver-Gilt, Silver or Bronze and, for vegetables, the Gold Medal and the Knightian Medal in the same way.

Obviously, in the period of transition from the old system to the new, some exhibitors may have felt that their award was inadequate or, rather, less than they expected; but, after all, the value of an award is not the intrinsic value of the medal but the distinction in the eye of the public which comes by the awarding of the medal to its recipient.

Any visitor to Vincent Square will now see that an exhibit may receive either a Bronze, Silver, Silver-Gilt or Gold Medal, and will know at once the value that is attached to it by the Committees and Council.

The Flora Medal was reserved by the Council for award at Chelsea or Holland Park for the following reasons:—Exhibits at Chelsea are much more numerous and vary much more in importance than those at Vincent Square and, consequently, if the same medals were awarded to exhibits in order of merit, it would obviously often happen that an exhibitor would receive a medal at Chelsea for a more important group than one for which he would obtain the same medal at Vincent Square and would, not unnaturally, feel himself aggrieved.

W. R. DYKES,
Secretary, R.H.S.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Pleiones.—Such Pleiones as P. maculata, P. lagenaria, and P. Wallichiana, will soon be passing out of flower, and when new roots are seen to be pushing from the bases of the green shoots they should be repotted. Shallow pans that may be suspended near to the roof-glass form the most suitable receptacles. Ample drainage is necessary. The rooting medium may consist of equal parts fibrous loam, Osmunda-fibre and Sphagnum-moss, all chopped into small portions and well mixed with crushed crocks and coarse silver sand. In repotting, receptacles of various sizes may be employed. It is advisable to grade the pseudo-bulbs; those of the largest size may be arranged together, planting them about two inches apart, and the smaller ones that may not flower may be placed in separate pans. After repotting, the plants should be given little or no water for two or three weeks, and afterwards only sufficient moisture to keep the soil damp, but when the roots are well established in the compost and the plants are in full growth water should be supplied copiously until growth is completed. The plants should be grown in a light, airy position near to the roof-glass in the intermediate house. To prevent the spread of red spider the foliage should be sponged, at intervals, with a weak solution of a reliable insecticide.

Cypripedium.—Plants of Cypripedium niveum, C. Godefroyae, C. bellatulum and varieties, together with their many hybrids, should receive very careful treatment during the winter months. Having thick, fleshy leaves, the plants do not require so much moisture at the roots as other Cypripediums. The compost should be allowed to become dry before water is applied, when the receptacle may be immersed nearly to the rim, or the water may be poured around the outer edges of the compost, the object being to prevent moisture lodging in the axils of the leaves. In removing the flower scapes, cut them clean to the base, as if they are allowed to die down they sometimes bring about decay in the centre of the shoot.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Sweet Peas.—Probably the greatest factor in the successful cultivation of Sweet Peas is the attention given to the preparation of the soil in which they are grown, and labour spent in this direction well repays the grower. The expense involved in the purchase of seeds and the raising of the seedling plants may be easily wasted unless the flowering quarters are thoroughly prepared. This work should be carried out in the early winter in order to allow the soil ample exposure to the weather and, if possible, trenches should be prepared two feet wide and three feet deep. Where space permits a good plan is to throw the top spit of soil to one side of the trench and the other two spits to the other side, leaving the soil exposed and the trench open to the weather. When frost has pulverised the soil the two lower spits may be returned to the trench, incorporating the best organic manure obtainable with it in the process. Finally replace the top spit and complete the work a month or six weeks before planting time so that the whole has time to consolidate.

Roses.—When planting in the Rose garden proper is completed any surplus plants may be used in the more out-of-the-way places of the garden. It not infrequently happens that a tall, loose-growing, natural hedge forms the dividing line between garden and field or garden and woodland, and the true rambler type of Rose is never seen to better advantage than in such a position. It likes the cool root run and though unmanured except for Nature's annual dressing, and often even unpruned, such Roses grow with amazing vigour and flower with lavish profusion. Such varieties as Blush Rambler, Hélène, The Garland, Claire Jacquier, Alister Stella Gray and Félicité et Perpétue are specially suitable for this purpose, but almost any of the vigorous-growing varieties may be used. For a low-growing, informal hedge, where dressed garden and wild garden meet, nothing could be more beautiful than that grand old variety Gruss an Teplitz. Similarly all the Lord Penzance hybrid-briars are excellent and give a threefold return for planting in that the flowers and fruits are highly decorative at different seasons and the scent is always gratifying.

Plants for Shade.—It is often desirable to plant low-growing plants as a carpet to furnish the ground under trees. Gaultheria procumbens and G. Shallon are suitable for this purpose and give a pretty effect. Euonymous radicans and its varieties are also invaluable for growing in shady places under trees and the native Butcher's Broom, Ruscus aculeatus is at home in such positions, while Ivy may generally be relied on to flourish even in dense shade. In partially-shaded positions, such as on banks with trees overhanging, or on the north side of buildings, Berberis aquifolium and Hypericum calycinum are very suitable and rapidly cover the space allotted them.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Perpetual-Flowering Carnations. — To keep these plants vigorous and sturdy and to ensure a succession of good flowers throughout the winter, care must be exercised during the shortening days in the matters of ventilating, watering and feeding. A stagnant atmosphere must be guarded against at all times. The air of the house may be kept buoyant by a careful use of both top and bottom ventilators, which, provided gentle warmth is maintained, may be kept open more or less, night and day, maintaining a temperature of 50° to about 58°. The watering of the plants should be done in the mornings to obviate excessive damp at night. Plants which have filled their pots with roots and are producing flowers freely, should be given a little stimulant such as Bentley's Carnation Manure, say, a small teaspoonful to a plant in a seven-inch pot, once in three weeks. The free use of stimulants, however, at this time of year is to be deprecated. See that the plants are not crowded and provide necessary supports which will ensure, so far as possible, erect growth, upon which alone can be produced perfect flowers.

Begonia Gloire de Sceaux.—This Begonia is one of the most useful amongst winter-flowering stove plants and may be grown as a successor to the Gloire de Lorraine type. With its fine metallic-bronze foliage and pleasing pink flowers, it makes an attractive plant for room decoration during the early months of the year. It should now occupy a light position in the stove house and be fed liberally with liquid manure. The plant is subject to attacks of thrips, which, if allowed to spread would soon result in the loss of the lower leaves. This, however, may be prevented by using the syringe freely and by occasionally spraying the plants with XL All liquid insecticide.

Lachenalias.—The plants which have been started in cold frames should be moved to a cool house. Having well filled their pots with roots, the plants will be benefited by an occasional watering with weak, clear soot water or liquid manure.

Early-Flowering Gladioli.—Such varieties of Gladiolus as The Bride and Peach Blossom may now be potted for spring-flowering. Seven or eight bulbs may be placed in a five-inch pot and ten or twelve in a six-inch receptacle. Start them in a cold frame covering the pots but slightly with a light plunging material.

Violets in Frames.—Where Violets are being grown in cold frames, the lights should be well covered by mats or other protecting material on frosty nights. If subjected to sharp frost the plants will suffer a serious check to their flowering. Remove all decaying foliage and stir the surface of the soil occasionally by means of a hand-fork. In mild weather a slight dusting of Clay's or other fertilizer between the plants and lightly watering it in, will be beneficial.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Renovation of Old Trees.—Old trees of favourite varieties that the grower does not wish to lose may be much improved by renovating the soil. The top spit should be removed down to the roots, the ground forked carefully between them, and a good dressing of coarse bone meal and wood ash incorporated with the soil. The old top soil may be taken away and fresh loam from an old pasture substituted. There is no need to chop the loam finely; place the turves evenly over the surface, grass side downwards, leaving about three inches of space between each. Fill the spaces with old Mushroom-bed manure, afterwards ramming it down firmly. The roots will soon find their way into it, and the tree benefit accordingly. A mulch of half-rotted manure will help to conserve the moisture in the soil and also keep frost from the roots.

The Fruit Room.—Continue to look over all fruits in store, and remove any that are in the least damaged or going bad. Apples may not keep so well this season as they did last, for owing to the wet summer the fruits are very juicy. Late-keeping varieties should be laid out as thinly as possible, and the less they are handled the better. Late varieties that have hung late on the trees have coloured well, owing perhaps more to the damp air than to the influence of sun. Several varieties have coloured quite as well this autumn as when the weather was dry and warm.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Cleansing Fruit Houses.—The chief work that calls for attention in the fruit houses for the next few weeks includes the pruning of the trees and cleansing of the house. Even where trees are apparently free from insect pests this work cannot be carried out too carefully, for cleanliness is, without doubt, one of the greatest aids to success. Red spider and mealy bug are, perhaps, the two worst enemies of the fruit grower, and if either of these pests have been in evidence during the late season, drastic measures must be taken to combat them. Mildew is very troublesome on vines and Peaches in some gardens, and once it is allowed to go unchecked great care is needed to stamp out this disease. When the work of cleansing is carried out, flowers of sulphur and carbolic soap may be used as remedies for mildew. During the dormant season, and after the vines or

Peaches have been well washed twice, or more in bad cases, with a strong solution of carbolic soap and allowed to become dry again, the flowers of sulphur may be applied. The sulphur should be mixed into a fairly thick paste and painted on the vines or trees with a brush, care being taken not to injure the buds while carrying out the work thoroughly.

Late Vineries.—As the vines become cleared of their crop it will be wise to shorten all lateral growths to within three or four buds for the present. This pruning will allow light and air to reach the wood and ripen it. Examine on frequent occasions the bunches of Grapes that are still hanging and remove bad and decaying berries. Promote a dry atmosphere so far as possible without causing undue dryness at the roots, which if allowed to become excessive dry would result in the berries shrivelling.

Young Vines. — Young vines that were planted in the borders last spring or even those that were planted during the summer have made good progress and the rods should now be cut back to the desired length. By shortening the vines now there will be far less risk of them bleeding when started into growth next spring. Allow the cut surfaces to become quite dry before applying a dressing of styptic some time before the flow of sap. This is not always a necessity but is a wise precaution.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Mint.—Roots of Mint intended for forcing should now be lifted and packed in boxes. Work fine soil amongst the roots and place the boxes in a warm house where plenty of light will reach the plants. Tarragon may also be forced in this way.

Plants in Frames. — Lettuces, Endives, Parsley, etc., should be carefully examined for the removal of decayed leaves. Stir the surface soil, water the plants carefully, and admit plenty of air on all favourable occasions.

Rhubarb.—Where the roots have been lifted previously they should be placed in a warm place, such as in a Mushroom house or below the plant stages of a glasshouse. Work plenty of leaves around the roots, and cover the crowns a few inches deep with the leaves.

Tomatos.—Plants intended to supply fruits early in spring will require careful attention in watering the roots and ventilating the house. If the plants are growing in three-inch pots they should be placed on a shelf near the roof-glass to keep them dwarf and sturdy. They do best for the present in small pots, for if over-potted the soil and roots might become unduly moist. Plants in bearing should receive close attention in the thinning of the foliage in order to allow plenty of light to reach the fruits. Water these plants with great care.

Roots in Store.—Where roots are stored in large quantities they should be carefully looked over, and any top growths removed. Decayed specimens should be watched for. This work may be done in bad weather. Many Potatos that seemed sound when lifted and stored have decayed.

Vacant Ground.—Where crops have been cleared the ground should be trenched or deeply dug, leaving the surface as rough as possible to expose the ground to the action of frost. By doing this, heavy soils will be easier to work in the spring. When soil is turned up many injurious grubs are eaten by birds. When the ground is hardened by frost manure should be wheeled on to the soil and spread evenly over the portion to be manured. The manure will keep the frost from the ground and enable the latter to be dug when the soil generally is too hard for working.

ARUM LILIES OUT OF DOORS.

Prominent among commercial plants, and frequently a boon to gardeners in private establishments both for cutting and for furnishing conservatories, the Arum Lily needs no introductory description.

Richardia africana is the Arum's correct title, but Calla aethiopica is in more general use, while a large proportion of those who grow and cut vast numbers to satisfy the extensive demands of the floral trade concern themselves with no other name than Arum, points of greater interest to them being cultural methods calculated to produce the maximum quantity of blooms at a minimum cost.

Although Arums are seldom seen or heard of as a permanent outdoor crop, this must surely be due to the fact that the possibilities of the plant are not widely realised.

Many growers plant their stock in the open after flowering, and lift and re-pot again at the approach of autumn, but the statement that beds of Arums grow undisturbed in the open ground for years has frequently been met with the retort: "Yes; in the South of France".

The accompanying illustration (Fig. 133), is from a photograph of a portion of an extensive series of beds in Staffordshire, at Trysull, a few miles from Wolverhampton. These beds were planted with single crowns, and the present size and strength of the clumps is sufficient evidence that they have been established a goodly number of years. In the right-hand corner of the picture a glimpse is seen of a new bed in its first season's growth, and comparison between this and the rest of the picture shows the progress made by the older plantations.

Unfortunately, the camera arrived on the scene just after a large consignment of blooms had been cut and packed, and Mr. John Salmon and his son considered the beds not worthy of a photograph at that time, but there is enough in the picture to show that "Arums as an outdoor crop" is not an idle phrase.

There are no secrets of cultivation and management. Deep cultivation, cow manure, a position open to sunshine but sheltered from rough wind, and a light mulch of loose litter during summer constitute the system of culture, but special measures are adopted to prevent possible damage during winter. First, a layer of rough, thorny brushwood that will not lie very closely is spread over the whole area, and over this rough open material is placed a good layer of straw, Bracken, Michaelmas Daisy tops, etc. Strings are then drawn across and fastened to a few stakes on either side to prevent the covering from being blown away.

The bottom layer of loose brushwood keeps the denser material off the ground and allows a current of air to pass through. If straw or other close material is placed in a thick layer immediately on the ground air is excluded, dampness would be excessive, and probably the crowns would rot. The trimmings of Thorn hedges, Gorse boughs, Heather, or any similar material will serve the requirements of this foundation, and with a good capping the safety of the roots is assured in the severest winter. In spring the covering is removed, the litter raked off, and the surface soil carefully loosened.

Arums thus grown need liberal feeding, and will pay for it. Often the blooms from these outdoor beds surpass the finest pot-grown Arums and realise as much money with less than half the cost of production. Peruvian guano is a good stimulant for Arums. Nitrate of soda, in small doses, while the buds are rising, will add to the size of the spathes, but this must not be overdone or the texture will suffer. One pound of nitrate of soda to thirty gallons of water is quite strong enough, and once a fortnight during the cropping season is often enough to use it. Guano may be sprinkled dry on the soil between the plants

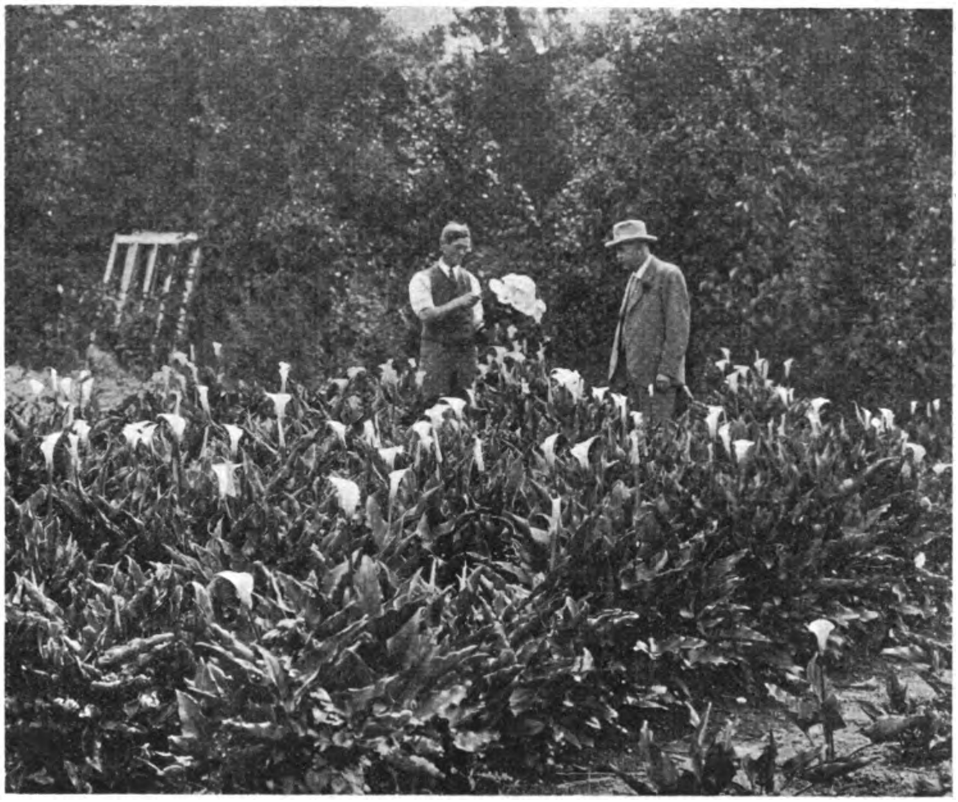


FIG. 133.—RICHARDIAS (ARUM LILIES) FLOWERING OUT-OF-DOORS IN STAFFORDSHIRE.

at the rate of four pounds per square rod.

Gardeners who have to meet a large demand for white flowers will find a bed of Arums a wonderful help, and even for garden effect a broad mass on the margin of the water garden or clumps by woodland walks will provide striking and pleasing features.

It is scarcely necessary to mention that it would be prudent to plant Arums in spring, when growth is active, thus giving the roots a full season in which to become established before undergoing their first winter out of doors. *A. J. Macself.*

HARDY FLOWER BORDER.

PACHYSANDRAS.

It is, I think, of service to warn growers of plants that give disappointment; even allowing a wide margin for differences of taste, there are a great number which no one should trouble with. These include the Pachysandras, one of which, P. terminalis, I see offered by firms of repute. This is a poor plant with little or nothing to recommend it, except that it may be employed for carpeting a shady place. But it is not even worth the room it occupies there, and the common Vinca, or Periwinkle, would be even better for the purpose. It is a creeping plant with dull variegation on its leaves and dull, ineffective flowers.

P. procumbens, which I once acquired in the search for flowers previously unknown to me, proved even a greater disappointment, and, after a couple of years trial, found its way to the rubbish heap—the fitting place for such a plant.

I have just looked up what Mr. Reginald Farrer had to say about these plants in *The English Rock Garden*, and was not surprised to find that we are in ageement. *Inter alia*, Mr. Farrer calls them "hardy dowds." My advice to those who may think of purchasing these Pachysandras is "don't."

PHYSOSTEGIA VIRGINIANA.

To those best acquainted with hardy border flowers it is a matter of regret that so little variety is to be seen in the average garden. There is no reason why this should be the case, as there is, to those who know them, an almost embarrassing choice of material, although many of the best hardy plants are almost neglected, and these include the Physostegias. There are several species of Physostegia, all natives of North America, but P. virginiana is the best and hardiest. The plant grows from one foot to four feet in height, this depending upon the character of the soil and the amount of moisture, but in general it is about three feet high. It has neat leaves and spikes of flowers which in the type are pink. A superior variety is called P. v. splendens, which has its pink flowers of a brighter tint than the type. A very charming variety is P. v. alba, with white flowers, and this is extremely good as a cut flower and excellent in the border. The typical P. virginiana may be raised from seeds, and it and the varieties splendens and alba may also be increased by division. A proportion of plants raised from seeds of P. v. alba will come true.

The plant should be grown in a sunny or semi-shaded position in a border of ordinary garden soil enriched with decayed manure. Planting may be done in spring or autumn; seeds may be sown in spring under glass.

Physostegia virginiana is figured in *The Botanical Magazine*, t. 467, where it is described under the name of Dracocephalum virginianum. Mr. James Sutherland is stated to have cultivated the plant so long ago as 1683. P. denticulata, figured in *Bot. Mag.*, t. 214, is closely allied to P. virginiana, and judging from the two plates it possesses smaller flowers of deeper pink colour. *S. A.*

ALPINE GARDEN

ANTIRRHINUM ASARINA.

This trailing species from Southern Europe, which may often be a fastidious and short-lived subject on the ledges of the average rock-garden, is admirable for draping the face of an old wall. No matter how dry the latter may be, A. Asarina will succeed, and from early summer to late autumn will maintain an unbroken succession of its large, ivory-white, pink-streaked blossoms.

A little difficult to start as a plant, perhaps, seeds take kindly to the chinks between the stones, even if these are almost bare of soil, and once a seedling has taken root-hold its growth is very rapid. Self sown seedlings will often rise from established plants, and as a healthy specimen, with its large, rounded leaves, will frequently make growths a yard long, a considerable space may be covered quickly. Though not hardy, the shelter provided by a vertical wall and the thorough drainage thus ensured are sufficient in most places to ensure this interesting Snapdragon surviving the winter.

LYSIMACHIA HENRYI.

This is a delightful plant for the rock-garden, and one easily grown in a well-drained, sandy loam in full exposure to sunshine.

The somewhat hirsute stems are spreading or partially trailing in habit, and with a reddish tinge of colour; the bright-green leaves, also slightly hirsute, are comparatively broad, linear, and set closely together in pairs.

The flowers are a delightful tone of honey-yellow, with a reddish-brown suffusion at their base; the plant flowers over a long period and well into the autumn, and grows with great freedom.

It is evergreen, or practically so, and is most attractive in rock-gardens, large or small. *Ralph E. Arnold.*

SILENE PUSILLA.

For a cool corner of the rockery there is no more delightful plant than Silene pusilla. It is hardy, long-lived, and extremely dainty, with its pad of tiny, glossy-green leaves, which is adorned all through the summer with small, milk-white flowers. The blossoms are held on extremely fine, upright stems, some two inches in height, the petals being slightly toothed, and they are borne in the greatest profusion. The rather larger, S. quadrifida, comes near to the above, and both appear to be natives of the limestone, though this is not essential. *J.*

ROSMARINUS OFFICINALIS PROSTRATA.

Even in gardens where the climate is genial, the prostrate-growing form of Rosemary is not commonly grown, which is the more surprising when one realises how distinctive and attractive are its many good qualities. Even in mid-winter its dark-green, glossy foliage, which pads the creeping branches as they follow the contour of the rocks with the closeness of an Ivy, is extremely effective, especially against limestone. But in addition to its value as an evergreen whose size and habits are ideal for the rock-garden, the trailing branches are in spring and summer (and often again in autumn) covered with the delicate azure of its innumerable flowers, which, like the foliage, are deliciously fragrant.

Though this native of the Isle of Capri is undoubtedly tender, perhaps rather more so than the type, one may take comfort in the fact that since R. o. prostrata is a creeping shrub, clinging to the face of a wall if need be, it is able thus to enjoy a certain measure of protection. In any event, a prostrate subject of this kind is always comparatively easy to shield from frost or cutting winds. A little dry Bracken-Fern or a few Spruce branches tied, or pegged, over the plant is all that it needs in average winters. *J. N. Wales.*

MICROMERIA CROATICA.

This Micromeria is one of the most charming little shrublets for the rock garden. It forms a small shrub, a foot or more in height, but should be kept dwarf by cutting back to prevent it becoming "leggy." A bush some nine inches or so high in the rock garden is exquisite with its small, grey-silvered foliage and its tiny, pinkish flowers, individually of little account, but when plentifully borne of high charm. To touch the plant gives one a pleasant surprise, as then it exhales a very pleasing fragrance, strong, yet not too pronounced, and delightful with its odour of Peppermint. It is easily grown on a sunny spot in the rock garden, preferring, apparently, a dry, sandy soil. It is quite hardy, and I have grown it for at least twelve years on a most exposed part of the rock garden, where it withstood the most severe winters of the period without injury. It is not plentiful in nurseries, but is not expensive where it is offered in catalogues. I believe it can be propagated by cuttings or seeds, but I have never seen seeds on my plants. *S. Arnott.*

CYANANTHUS.

In my opinion, Cyananthus incanus leiocalyx has been the most brilliantly-flowered alpine of the year. Exquisitely-shaped, shadowless, and luminous, the flower in general appearance resembles the Harebell, with a dense fringe of hairs choking the mouth of the corolla tube.

While the trailing growths delight to ramble among the stones in a warm, sunny position, the roots require plenty of moisture during the growing season and a deep, extensive root-run.

Cyananthus incanus is reputed to be a more difficult plant to cultivate than its congener, C. lobatus, whose five reflexed segments are stained an intense purple-blue, the interior of the throat being lined with soft, white hairs. Both species are autumn flowering, and will eventually find a place in every rock garden. *Fred. W. Jeffery.*

BOG GARDEN.

SAXIFRAGA PELTATA.

This is one of the handsomest of water-side plants, and one that may with confidence be planted in any moist ground, such as wood bottoms, where the shade is not too dense.

Being a Californian species, often growing in full sunlight in its own country, it is only reasonable to conclude that it will enjoy all the sun that our climate can afford it.

S. peltata is a herbaceous plant with thick rhizomes which cover the ground and send up in spring yard-long stems, red and bristly, terminating in bold heads of ruby-red and pale rose flowers. When these have died down the foliage appears, each leaf on a stem almost as tall as that of the flower, being round, about a foot across, and so convex that in rainy weather a single leaf may hold a cupful of water. This noble foliage turns a warm yellow before dying in autumn.

Oddly enough, for a Californian plant, this Saxifrage seems to be indestructably hardy, and although it will eventually cover as large a space as circumstances permit, it is not, in my experience, a fast grower, nor can it be considered anything like such a rampant spreader as some of the Rodgersias.

In its native land S. peltata is practically an aquatic, its great rhizomes, matted together, pushing out across the water, and thus sometimes forming a rigid shelf nearly strong enough to bear a person's weight. There, also, the leaves are often shoulder high, and they frequently throng the banks of the streams to the exclusion of all other plants. *J.*

TREES AND SHRUBS.

DENDROMECON RIGIDUM.

THE Californian Tree Poppy, apart from its great beauty, has a longer period of blossoming than most plants. This year it opened its first flowers here early in May, and notwithstanding the sunless summer, our oldest bush, over eight feet in height, has never been without some of its fragrant golden Poppies until the time of writing (Nov. 18), when its career was checked by some ten degrees of frost. Even young plants, raised from cuttings struck in the spring of last year, came into bloom soon after midsummer and they have made several feet of growth.

Dendromecon rigidum seems to be one of those shrubs which neither knows nor requires any season of rest, for even in the poorest of stony soil, which appears to suit it best, it continues to throw-up its Willow-like shoots in succession, from spring to late autumn, so that there are always some sappy shoots to be injured by frost. Apart from such partial injury, only once, when we had over twenty degrees of frost for several days, has the shrub been killed outright. Planted in a free soil and given some measure of protection at its base, D. rigidum will probably succeed in most places as a wall subject, for few shrubs will spring more vigorously from the base after being cut back than this one.

ESCALLONIA EXONIENSIS.

THIS hybrid (E. pterocladon × E. rubra) is one of, if not the hardiest of, the evergreen Escallonias, and it is probably the most vigorous, making a bushy shrub, or small tree, between ten feet and twenty feet in height according to the locality and situation.

It is a shrub of rapid growth, whilst the shapely habit and the glossy, dark Olive-green foliage are distinctly attractive, the latter making an admirable setting for the pinky-white blossoms.

The inflorescences form terminal panicles about four inches in length and the plant commences to flower early in June, a constant succession of bloom being maintained until late autumn.

E. exoniensis, in common with most of its kind, will thrive in almost any light loam, even when this is poor and dry. *W.*

ERICA CILIARIS.

THIS is always the last of our native Heaths to bloom, and few plants in the November garden are more beautiful than this species with its broad masses of almost Pea-green foliage and fine racemes of very large, rosy-lilac blossoms. Though not considered among the hardiest of Heaths this species has never suffered with us, and the twelve degrees of frost which we experienced a few days ago did not cause any ill effect, even the blossoms surviving.

We grow E. ciliaris in the more open parts of our woodland garden, selecting a spot where the soil—a light, gritty loam, is fairly cool, for this species does not resist drought so well as E. cinerea and Calluna vulgaris and their varieties. Our plants have no peat at the roots, but a little leaf-mould is worked into the soil at the time of planting, after which they are never given any attention.

E. ciliaris var. Maweana, is a very beautiful form, said to have been introduced from Portugal some fifty years ago by Mr. George Maw. It blooms well into November and differs from the type in its rather more upright habit, the deeper green of its foliage and its larger flowers. The latter are of the same colour as the foregoing, but they are inclined to be redder at the lips of the corolla.

E. Watsonii is another Heath which derives its late blooming from E. ciliaris, one of its parents—the other being E. Tetralix. The blossoms of this hybrid are much like those of the Dorset Heath, but the racemes are flatter, or more bunchy, as in E. Tetralix, and the foliage also bears a resemblance to that of the latter.

These Heaths, later even than E. vagans here, may always be depended on to link up the end of the summer blooming species with those of autumn and winter, for they have not shed the last of their flowers before E. darleyensis is flushed with rosy-pink and E. carnea and E. lusitanica are about to expand their flower-buds.

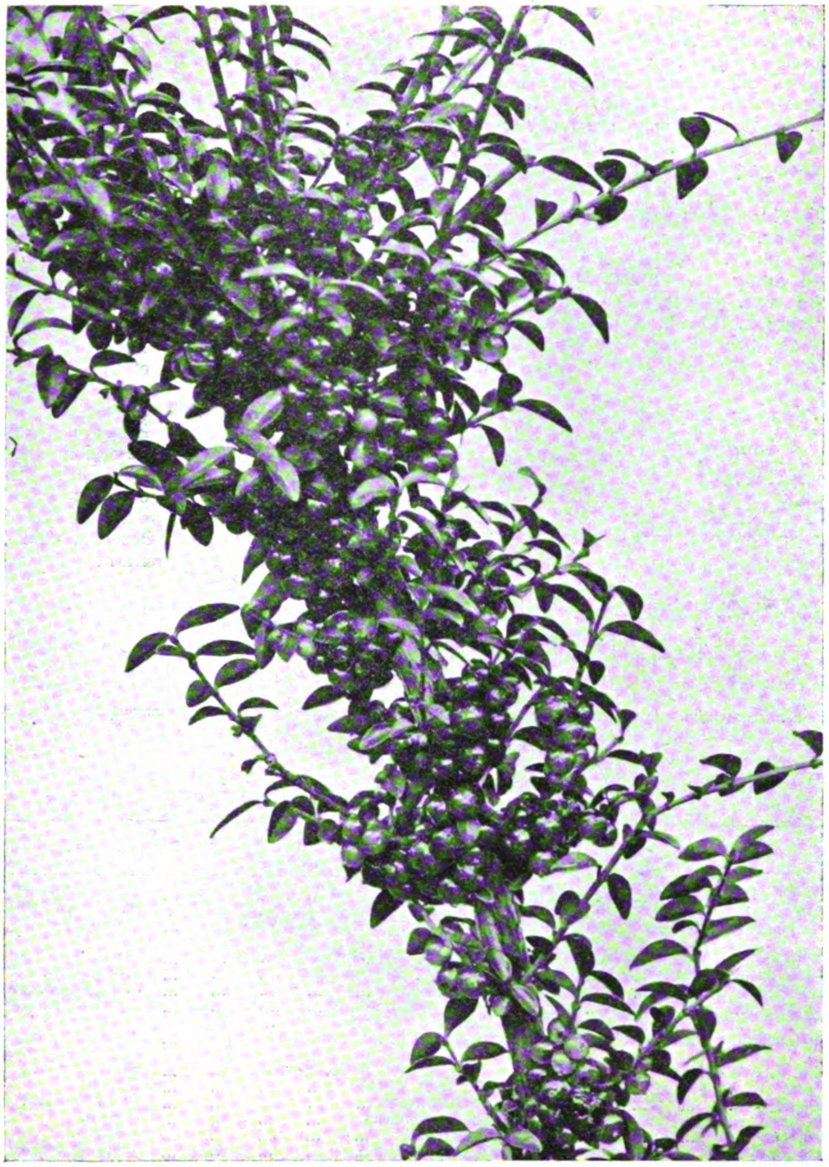


FIG. 134.—LONICERA PILEATA, VAR. YUNNANENSIS

R.H.S. Award of Merit, November 4, 1924.

GAULTHERIA TRICHOPHYLLA.

THIS dainty little plant may be considered one of the easiest of a somewhat difficult race to cultivate. It is an evergreen shrub, not more than about three inches high, which makes a close carpet of verdure with its very slender, wiry stems that are amply furnished with deep green, glossy leaves, one-eighth of an inch wide and twice as long.

When planted in a moderately cool loam incorporated with leaf-mould or peat, in a partly shaded place, Gaultheria trichophylla will soon spread and form a patch of considerable size, when it produces its cup-shaped pink flowers with freedom, these being succeeded by fruits as large as a sparrow's egg and of a vivid china blue.

G. trichophylla, though a Himalayan species, seems to be perfectly hardy. We grow it in the woodland with other lowly species of the Ericaceae; it also makes an admirable rock garden subject for a cool spot, and is first-rate as a carpeting for dwarf Rhododendrons and such like plants. Pot specimens should be planted if good clumps are not available. A spring top-dressing of sifted leaf-mould and sand is very beneficial to this plant.

The plant is a native of the Himalayas, and was introduced to Kew in 1897.

LONICERA PILEATA VAR. YUNNANENSIS.

UNDER the name of Lonicera ligustrina var. yunnanensis this desirable and attractive evergreen shrub (Fig. 134) received an Award of Merit when exhibited by Lt.-Col. Stephenson R. Clarke, C.B., Cuckfield, Sussex, at the fortnightly meeting of the Royal Horticultural Society on November 4.

In addition to the subject of this note, several other very distinct, evergreen, bush Honeysuckles have been introduced from China during the last twenty-five years. The best known is L. nitida, which is being freely planted for making evergreen hedges. This was discovered and introduced by Mr.

E. H. Wilson from Western Szechuan during 1908. Though previously discovered by Prof. Augustine Henry, L. pileata was first introduced by Mr. Wilson in 1900. Previously known as a Himalayan shrub and cultivated in India for hedges, the plant named L. ligustrina was introduced from Western China by Mr. E. H. Wilson in 1900. In a *Monograph of the Genus Lonicera*, published in 1896, Franchet enumerated L. pileata, and the subject of this note (var. yunnanensis)—described from specimens collected by Delavay—as varieties of L. ligustrina. Rehder, in the *Report of the Missouri Botanic Gardens* for 1903, describes the Yunnan plant as a variety of L. pileata, with the following comment: "var. yunnanensis differs from pileata only in the very small, suborbicular to broadly ovate, rather thick leaves." This difference is quoted in the *Botanical Magazine* for 1906, tab. 8060, in connection with a figure of L. pileata. As garden plants the two are very distinct, L. pileata being of low, spreading growth, and the variety yunnanensis neat and upright in habit.

With its close, compact habit of growth, L. pileata var. yunnanensis offers possibilities as a hedge plant. As a rock garden bush, or grouped along the front of a shrubbery border the var. yunnanensis will be useful as an evergreen. It is also attractive when in fruit, as the fleshy, purple fruits are freely produced and closely set on the branches.

In addition to increase by seeds, cuttings made of the young shoots root readily in a close frame from midsummer onwards. *A. Osborn, Kew.*

RHODODENDRON GLAUCUM.

Owing to its very slow growth, and dwarf, compact habit, this evergreen Rhododendron should appeal to rock-gardeners or those whose space is too limited for the larger members of its genus. Being one of the older species, having been introduced from the Himalayas in 1850, it is comparatively cheap. Hardiness is another quality of R. glaucum which will commend it to many, but being a May bloomer it is apt to be injured by late frosts.

Though R. glaucum is said to attain the stature of six feet a specimen that has been growing in our rock garden for over ten years is not more than one foot high, the spread of the branches being about two feet.

The oval-oblong leaves of this little shrub are leathery, dark glossy-green, glaucous beneath and aromatic. The flowers arise above the foliage in loose, terminal clusters of about half-a-dozen. They are nodding, bell-shaped, rather more than one inch across, and of a cheerful rosy-red. If the colour of the blooms is not so striking as that of many Rhododendrons, the little bush when in full flower is a very charming object, and it is, moreover, a most reliable blossomer, producing a crop year after year without a break.

COTONEASTER FRANCHETII.

This is one of the most beautiful of the taller Cotoneasters, making a shrub of eight feet or more in height. It has a somewhat open and angular habit of branching which is distinct and effective, especially in a shrub that bears its fruit on short, lateral growths that arise from the old wood, including even the main boughs and stems.

C. Franchetii is an evergreen, the oval leaves, sharply pointed at each end, and about one inch long, being covered with a grey down, more especially when young. The fruit is oblong, about one-third of an inch long, and borne in clusters of six to a dozen. These berries ripen to a bright orange-scarlet in late October, and, like those of C. Simonsii, they remain on the branches for a long while.

The only other species which this one is likely to be confused with is C. pannosa. The latter is much more hairy in all its parts; its long and slender, often drooping, Willow-like branches are more elegant than those of C. Franchetii, the fruit is much smaller, more pendulous in the cluster, and ripens to a full-toned crimson, without a trace of orange, whilst the flowers of C. pannosa have not that vivid touch of pink which is so distinctive a feature of the other species.

C. Franchetii appears to be indifferent as to soil and situation, but if the former is inclined to be poor and the latter fully exposed, so much the more prolific is the crop of fruit likely to be. *A. T. Johnson, Ro Wen, Talycafn, North Wales.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM REVE D'OR.

This magnificent new Odontoglossum, shown by Messrs. Charlesworth and Co., at the Royal Horticultural Society's meeting on November 18, demands special notice, not only as being one of the finest and most perfect in form of the yellow class, but by reason of the records of its production, which indicate a remarkable instance of the patience with which the leading hybridists pursue their well-considered methods to a definite end. The novelty was obtained by crossing their O. Boadicea aureum of 1915 (ardentissimum xanthotes × triumphans aureum) and O. harvengtense aureum (crispum xanthotes × triumphans aureum). The method succeeded perfectly by giving flowers of the very finest O. crispum type with a Primrose ground shaded and blotched with bright Buttercup-yellow. It is not the first instance in which their fine strain of O. c. xanthotes has dominated the bright yellow in hybrid Odontoglossums.

ORCHIS HIRCINA.

I have been very interested in some recent correspondence concerning the above terrestrial Orchid, a species comparatively rare in England, but which may be met with in considerable quantities in some parts of the Maritime Alps. Where it is found growing in heavy, calcareous soil, some exceptionally fine specimens may be discovered. During a recent ramble my two boys discovered a last year's spike measuring twenty-one inches in length. I have a vivid recollection of coming upon a veritable garden of about two hundred plants of Orchis hircina in full flower; this was nearly thirty years ago and the spot was within half-a-mile of the locality which gave the twenty-one-inch spike. It was a grand sight, but alas! that locality, which was then a wild mountain side, is now covered with vineyards and Olive groves, and although most of the species of Ophrys are to be found there in quantity beneath the Olives, O. hircina has disappeared, probably owing to the lack of sunshine, in which it revels and which is essential to its well-being. Readers may conceive the delight of na Orchid lover while strolling through one of these Olive groves in spring, when the ground is literally covered with myriads of Anemone stellata in all its varied colours, with here and there patches of Ophrys, Allium neapolitanum, and various other wild flowers, whilst the moss and lichen-covered, low terrace walls are studded with the Resurrection Fern (Cetarach officinarum) Asplenium Adiantum-nigrum, and often the large-leaved Pennywort (Umbilicus). Last season I had the pleasure of directing a lady flower-lover to one of these beauty spots. The following day she motored out to see it and took the trouble to call on me *au retour* to inform me she had spent some of the happiest moments of her life in what she considered was one of nature's beauty spots. *F. W. Smith, Château des Dunes, Cannes.*

NEW ORCHID HYBRIDS.

(*Continued from September 27, p. 212.*)

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Alderman	B.-C. Nestor × C. Dowiana	Flory & Black.
Brasso-Cattleya Fabia	C. Fabia × B.-C. Massangeana	Flory & Black.
Brasso-Cattleya Sir Woodman Burbidge	B.-C. Cliftonii × C. Warscewiczii	Sanders.
Brasso-Laelio-Cattleya bletchleyensis ...	L.-C. Canhamiana × B.-L. Helen	Sir H. Leon.
Brasso-Laelio-Cattleya Titania	C. Iris × B.-L.-C. The Baroness	Stuart Low.
Cattleya Alice Abeel	Dowiana × Zephyr	J. P. Mossman.
Cattleya Coret	La Nymphe × Warscewiczii	Sir H. Leon.
*Cattleya Etta	Mrs. J. Ansaldo × Warscewiczii F. M. Beyrodt	Flory & Black.
Cattleya Mendelissima var. Blushing Bride	Luddemanniana Stanleyi × Mendelii alba ...	S. Gratrix, Esq.
Cattleya Mrs. J. Ansaldo	Adula × Warscewiczii F. M. Beyrodt	Flory & Black
Cattleya Vesta	Snowdrop × Lady Veitch	Cowan.
Cattleya Wembley	Peetersii × Alexandra	Flory & Black.
Cymbidium Mona	Tracyanum × pendulum	Cowan.
Cypripedium Ceryl	Ceres × Beryl	Sanders.
Cypripedium Fantasia	Cyclops × Christopher	Flory & Black.
Cypripedium Golden Wings	Mrs. F. Sander × Golden Morn	P. Smith Esq.
Cypripedium Mons. O. Opoix	Mme. Albert Fevrier × Druryi	Mon. Cuny, Luxembourg.
Cypripedium Valkyrie	Earl Tankerville × Aeson giganteum	S. Gratrix, Esq.
Laelio-Cattleya Cardinal Mercier ...	L.-C. Baron Coffinet × C. Hardyana	Mon J. Janssens.
Laelio-Cattleya Cherub	H. T. Pitt × Serbia	Flory & Black.
Laelio-Cattleya Eskeriana	L.-C. Geo. Woodhams × C. Adula	Mon. J. Janssens.
Laelio-Cattleya Fame	C. Fabia × L.-C. Sir Douglas Haig	Sir G. Holford.
Laelio-Cattleya Jean	L.-C. Thyone × C. Adula	Flory & Black.
Laelio-Cattleya Mme. Lucia	C. Iris × L.-C. Colmaniana	Mon. J. Janssens.
Laelio-Cattleya Pandora	C. Fabia × L.-C. Marmion	Cowan.
Laelio-Cattleya Prudence	L.-C. Soulange × C. Rhoda	Flory & Black.
Laelio-Cattleya Rentier	L.-C. Rubens × C. Lord Rothschild	Sir H. Leon.
Laelio-Cattleya Robina	L.-C. Robin Measures × C. Dowiana	Stuart Low.
Laelio-Cattleya St. Maria-burg	Geo. Woodhams × Dominiana	Mon. J. Janssens.
Laelio-Cattleya Troubadour	L.-C. Teucra × C. Empress Frederick	Flory & Black.
Miltonioda Boadicea	Miltonioda Harwoodii × Miltonia vexillaria var. Lyoth	Charlesworth.
Odontioda Juliana	Oda. Brewii × Odm. Pescatorei	Charlesworth.
Odontioda Montana	Oda. Wilsonii × Oda. Joan	Charlesworth.
Odontioda Phidias	Oda. Elsie × Odm. Aquitania	Charlesworth.
Odontoglossum Arcansas	Fascinator × crispo-Solon	Charlesworth.
Odontoglossum Camilla	Penelope × Georgius Rex	Charlesworth.
Odontoglossum Gundo	Thompsonianum × Queen Alexandra	P. Smith, Esq.
Odontoglossum Rève d'Or	Boadicea aureum × harvengtense	Charlesworth.
Odontonia Ailsa	O. Princess Marie Jose × Odm. eximium ...	P. Smith, Esq.
Odontonia Regalis	M. vexillaria Queen Alexandra × Odm. Aquitania	Charlesworth.
Phalaenopsis Fernand Denis	Artemis × Sanderiana	Mon. Bultel.

* Shown as Mildred, name previously used.

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

MECONOPSIS HETEROPHYLLA.

This beautiful Californian annual is well suited for a small, cool glasshouse. The seeds are best sown about the middle of September. As the seedlings transplant badly the seeds are best sown directly into the flowering pots, five-inch pots being the most suitable size for this purpose.

Meconopsis heterophylla is a plant which succeeds in any fairly light potting compost, but it requires careful watering during the winter, for in common with many Californian plants of this class, damp conditions must be guarded against, and the plants are best wintered in a cool, airy, greenhouse where they can be grown near to the roof-glass. This Meconopsis usually grows about one foot in height, but under glass it is commonly somewhat taller.

MAURANDIA (SYN. LOPHOSPERMUM).

There are several species and varieties of Maurandia; they are climbing plants useful for conservatory decoration during the summer. They may all be treated as annuals, for if seeds are sown in an intermediate temperature during February or March, the resulting plants will flower during the summer and autumn.

All the species are quick-growing plants, and should be potted on as they require it until in seven-inch or eight-inch pots. They flower well and are very useful for furnishing wires or rafters in the greenhouse during the summer.

The successful cultivation of these plants presents no difficulty as they grow freely in any good potting compost. Probably the best-known species is M. Barclaiana, which has large, violet-purple flowers. Although usually treated as an annual this plant is really a short-lived perennial, and may be treated as such if so desired.

M. Lucyana is a distinct and attractive form of M. Barclaiana. Other species worth growing are M. erubescens and M. scandens, of which there are several varieties.

MINA LOBATA.

This plant is now referred to Ipomoea versicolor, but I retain the name by which it is generally known in gardens. It is a pretty, free-flowering, half-hardy, climbing annual, which is very useful for the cool greenhouse during the summer and autumn. Seeds should be sown in an intermediate temperature during February or March, and when large enough the seedlings should be placed singly in small pots. Three plants may be flowered together in an eight-inch pot; as they increase in size and the season advances the plants should be accustomed to the conditions of the cool greenhouse. When placed in the conservatory they may be trained up wires, or they may be grown in specimen form, training them neatly to slender stakes, or using slender sprays of Hazel for their supports. This plant grows quite freely in any good potting compost. *J. Coutts.*

INDOOR PLANTS.

HUMEA ELEGANS.

This charming greenhouse plant may be flowered within a few months from seeds sown early in the year. The plants do not develop into so large specimens as those raised the previous summer, but this is not altogether a disadvantage.

Sow the seeds thinly in a shallow pan early in February and place in a warm greenhouse to germinate. When the seedlings are large enough to handle pot them into small pots. Growth will be rapid, and by the third week in June the plants will be ready to be potted into receptacles eight inches in diameter, in which they will develop into well-proportioned plants five feet high. *F. W. J.*

KAEMPFERIA ROTUNDA.

The flowers of this quaint-looking plant usually appear in March or April before the leaves, and they are very like those of some Orchids, such as Pleione. They are of a mauve-pink and white colour, but the foliage has the greatest decorative value. The leaves grow to a height of eighteen inches or two feet, and closely resemble those of some Marantas, being dark green with darker markings.

A very warm temperature is necessary for the well being of this plant which needs a thorough rest when dormant, and requiring similar treatment to that afforded the Gloxinia. Loam and peat in equal proportions provide a suitable compost. *R. E. A.*

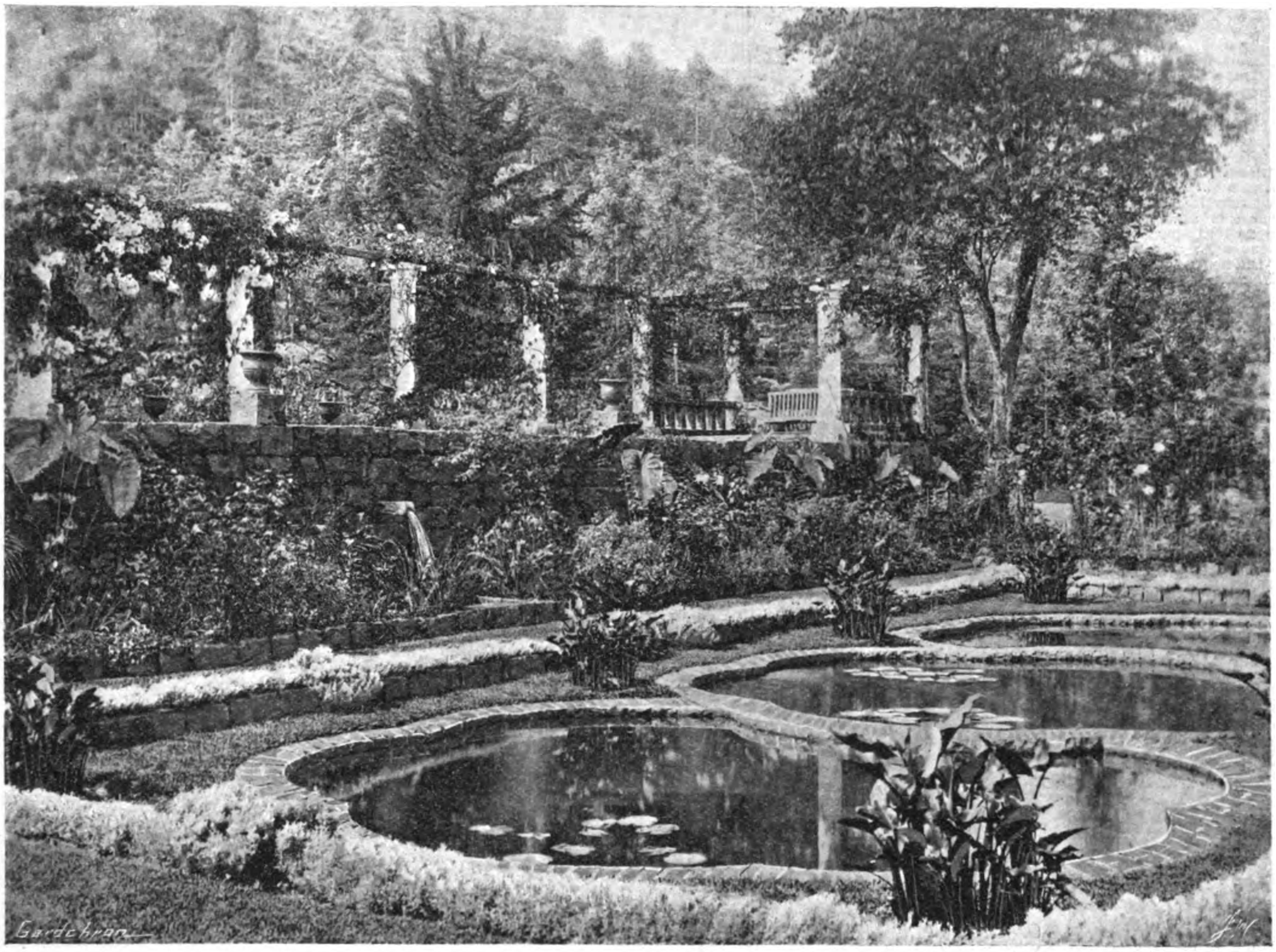


FIG. 135.—THE LOTUS GARDEN AT ROEHAMPTON, CEYLON.

EDITORIAL NOTIOES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

A HILL GARDEN IN CEYLON.

ROEHAMPTON is a Tea estate in the province of Uva, Ceylon, where, by escaping the south-west monsoon, we "enjoy," from June to September, four months of drought, which give to the "Uva Teas" a flavour of their own—and high prices—but which is somewhat detrimental to gardening, unless there is an unlimited supply of water. Fortunately Roehampton has a stream of running water unaffected by the dry season. The Bungalow, an unpretentious, long building, hides its architectural deficiencies under a coat of Ceylon Ivy, a clinging Ficus with small, dark green leaves, relieved by a wide border of Begonia fuchsioides. The latter grows eight feet high and is covered in all seasons with pendant clusters of coral-red flowers. Here also are standards of double pink Hibiscus and Caroline Testout Roses, which, although pruned each year in December, have become almost trees. Fan Palms, planted here and there at regular intervals, make a happy contrast.

The house is built on a plateau 5,000 feet above sea level sheltered on the east by 6,000-feet high hills crowned with virgin jungle. It faces west and commands extensive panoramic views over the Uva patrias, similar to downs, while the back-ground of the 7,000 feet Newara Elyha chain, with its ragged peaks, provides glorious colouring during the monsoon sunsets. The setting is worthy of any garden.

When first I was given *carte blanche* to tackle a garden laid out at random with no landscape knowledge, I was confronted with the added difficulty of having to undo before creating and to know where to begin.

There was, some fifty feet from the Bungalow, a shapeless hole seven feet deep, in parts, and some one hundred feet by thirty feet in extent—a sort of disused quarry, where lingered an unkept, semi-wild kitchen garden and it seemed a necessity to do away at once with this eyesore.

The work was begun in July, during the dry season, and thirty coolies were set to work levelling a plateau one-hundred-and-fifty feet by fifty feet, quarrying and cutting stones, removing earth, and building on two sides, north and west, a dry well six feet high, and a long walk twelve feet broad, lined on one side by seven white pillars, (Fig. 135) making a screen ending by a loggia. A border six feet wide was made around the garden, then came a stone coping, a grass walk five feet wide, another coping of stone, forming steps, and three connected ponds in the heraldic shape of the Lotus—the sacred flower of Ceylon. Twelve steps, with water running in the centre, connect the Lotus Garden with the wild garden some six feet below.

The "skeleton" of the garden was ready by December, and then came the selection of plants and flowers suitable to climate and altitude, *i.e.*, a sub-tropical vegetation, almost tropical, owing to the absence of frost.

Commencing from the pergola and working downwards to the wild garden (Fig. 136), the principal plants used were as follow. At the foot of the pillars the Tangepoo or Bignonia with tassels of apricot-coloured flowers, a blaze of colour towards August, alternating with the large mauve Solanum, or Potato Creeper; climbing pink Roses—Euphrosyne—and the pink Passiflora with its hanging flowers of richest pink and its fruits with the shape, colour, and bloom of Apricots. The Loggia is covered with similar climbers which, by now, have overtopped the eaves and hang in festoons from the tops of the jungle trees near by. This very effective mixture of Apricot, mauve, and pink is brought out by a background of standard plants of the double Datura, of parasol-like shape, and ten feet high, which three times a year at least become masses of hanging, white, Lily-like trumpets, and fill the air with their somewhat overpowering perfume

Pelargoniums, King of Denmark, salmon-pink, alternate with Heavenly Blue Ipomaeas, grown on cone-like frames in the large locally-made terra-cotta vases, which line the wall.

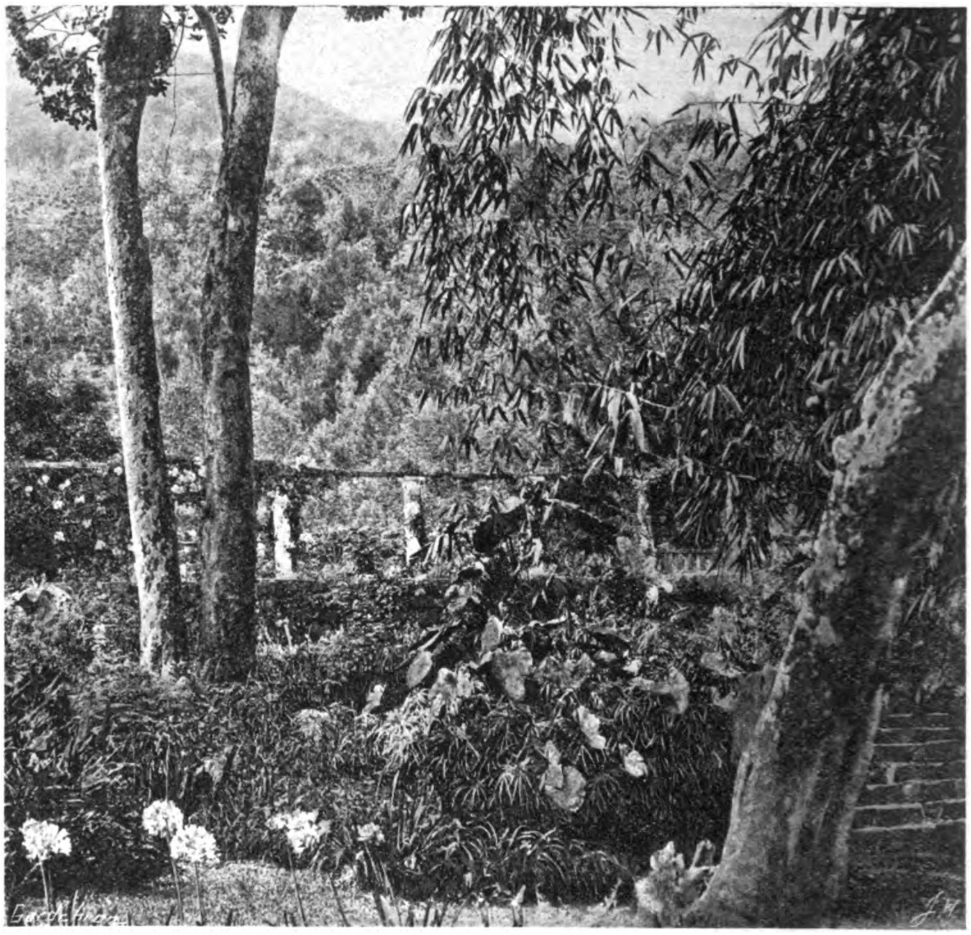


FIG. 136.—VIEW IN THE WILD GARDEN AT ROEHAMPTON, CEYLON.

Passing by a flight of twelve steps we come down to the Lotus Garden proper (Fig. 137). The background made by the six-foot wall is relieved by Maréchal Niel and William Allen Richardson Roses, which grow wild. Close to the wall are small Palms, Alocacias, and a jungle plant with Orchid-like flowers, white, spotted with blood-red. The middle distance and front are planted with clumps of Lilium longiflorum, five feet high; tree Fuchsias, white and blue Agapanthus, Heliotropes, hybrid Tea Roses, Begonia Rex and other kinds, yellow Arum Lilies, Amaryllis, deep red, pink, and variegated red, and white and mauve Salvias and Sobralias. A thick border of pink Zephyranthes (Ceylon Crocus), and purple and silver foliage hides the stone coping.

Beyond there is a grass path, beautifully green year in year out, and another flight of stone steps, overhung with French Lavender kept in a semi-wild border broken here and there with higher clumps of silvery foliage. Further down are eight circular beds of white Arum Lilies, which grow wild at this altitude in Ceylon and attain a marvellous size when given liquid manure weekly.

The Lotus pond is planted with blue, pink, and yellow Nymphaeas, kept quite distinct by regularly reducing the number of the leaves which are not allowed to exceed twelve to fourteen for each plant; their foliage is either green or bronze and looks exceedingly well. The copings, green paths, and border are repeated, and the wild garden is reached by twelve steps in the west centre.

This is overhung by a Bamboo of immense size, which wanders over two hundred feet by grass lawns, stream, and informal pond. Broad, irregular spaces are dotted with Musas and tree Ferns, and wild Ginger

and Alocacias are freely planted, with Papyrus, broken by Yams, African Lilies, tree Coleus, Dahlias, Hemerocallis flava, and the Japanese Musa with scarlet, Pineapple-shaped inflorescence. Here are sheets of scarlet Amaryllis, seventeen kinds of Salvias, varying from pale salmon-pink to scarlet, and wine colour, mauve to purple, sky-blue to royal-blue; Montbretias in profusion, Agapanthuses, and flesh-coloured Cannas which, with the help of nitrate of soda, reach the height of seven feet. Pink and white Cosmos and Gladioli from Messrs. Vilmorin-Andrieux and Co., spring from carpets of deep-red and pink Coleus, while pink Carnations and the mauve-striped and pink Mikado, both from yearly cuttings, are grown in clumps in the Lotus garden and the wild garden.

To this description must be added the surprises in the shape of wild tropical vegetation, the silver and golden Ferns, besides many others which sow themselves in every crack between the stones, and unexpected seedlings which flower in the right place and fill unlooked-for gaps — but the ultimate effect of flowers and foliage cannot be described.

The one drawback is the rapidity with which all plants grow and multiply; and how quickly all returns to the jungle! It requires a constant, almost daily, care, and judicious thinning—extremely difficult to obtain from Tamil gardeners, who are very willing and good workers, but with no initiative, and an inordinate love for over-using the knife. It is strange that in this land of beauty, the earthly paradise of the garden lover, the Singalese is a hopeless gardener, quite impossible to train, and one not to rely on. Tamil coolies, or rather, Hill Cochins, make the best gardeners, but they are seldom up to the skill required by such vegetation and this style of garden.

The photographs (Figs. 135, 136, 137) were taken in the third year after the making of the garden—in September—and show the wonderful growth, which necessitates thinning, dividing, and replanting from new cuttings—which, by the way, strike in no time every year.

Roehampton gardens are a fair example of a formal garden in Ceylon. But the height of art and delight is in making a garden out of the jungle, and showing in a wild way the beauties of nature. I hope to describe such a garden in another article. *Count de Mauny, Ceylon.*

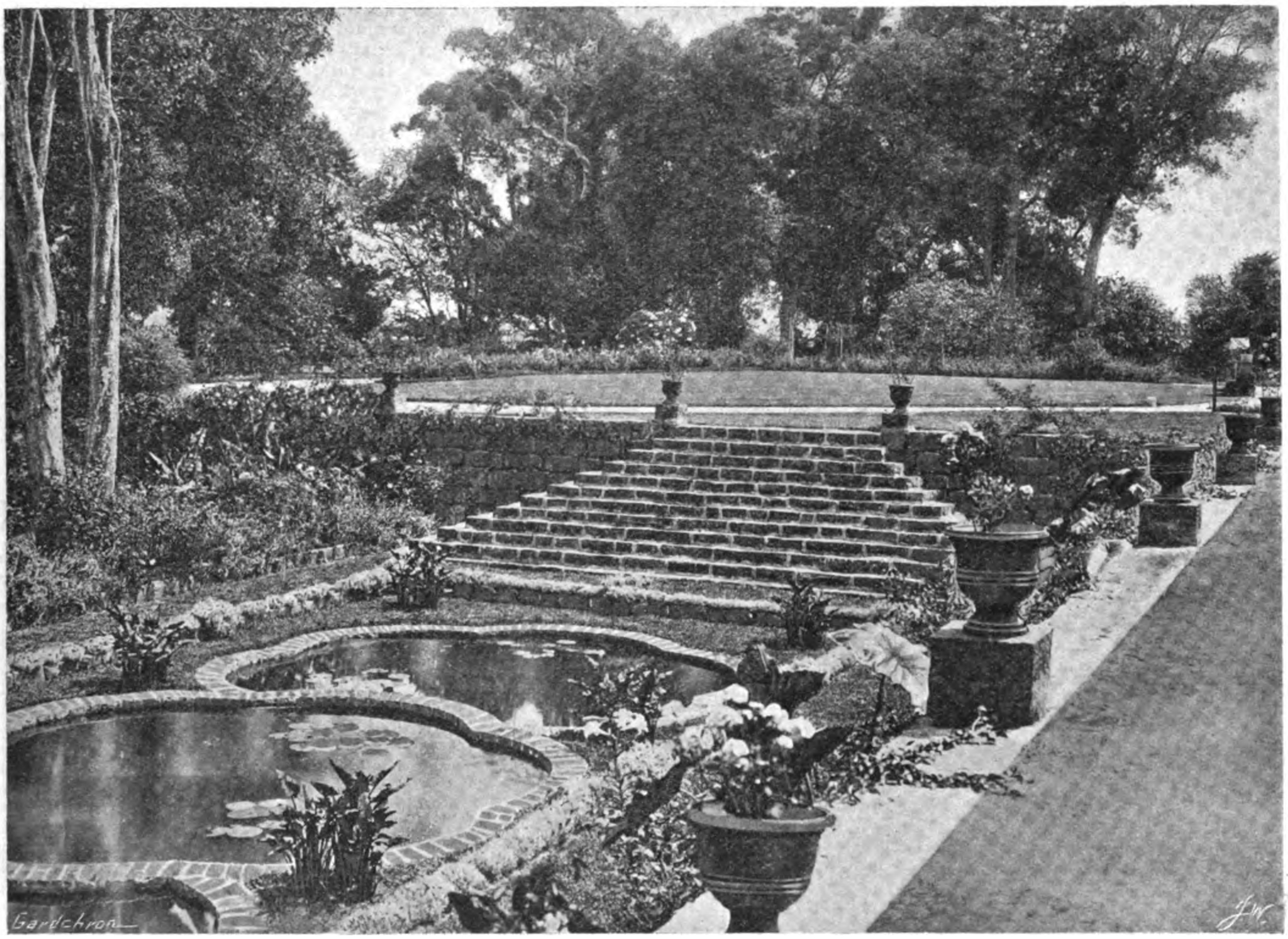


FIG. 137.—THE LOTUS GARDEN AT ROEHAMPTON, CEYLON; WITH STEPS AND TERRACE WALK.

GARDENERS' EXAMINATIONS.

In these days of great competition, when it is only the most capable who can command the best-paid work, it does seem very essential that gardeners, just as much as other classes of workers, should do their utmost to make themselves as efficient as possible.

There are many among the younger generation of gardeners who are doing their best to educate themselves, and scores of them sit each year for the General Examination of the Royal Horticultural Society, and then go on later to take the Diploma in Horticulture. There are several people who every winter conduct a correspondence coaching course for these gardeners, and set them weekly papers of questions on the theory and practise of gardening, educating them up to the standard demanded by these examinations.

The General Examination of the Royal Horticultural Society (commonly called "The Royal") is usually held in the latter part of March, and is a most excellent test of proficiency for gardeners, consisting of a three-hour paper, of which the first section may be said to cover the ground theoretically, and the second, practically. The first-half comprises an all-round knowledge of botany (elementary), as applicable to plant-life, such as the processes of respiration, transpiration, carbon-assimilation, and other allied subjects. Also this subject covers the question of soils, and how to deal with them, and improve them; manures, those best suited for the different kinds of crops, and how to apply them.

The second section, devoted more to the practical side, is naturally that most beloved of gardeners, and covers a fairly extensive ground, including the cultivation of all ordinary fruit crops, vegetables, and flowers, and is, in fact, an outline of "garden practise."

There is quite a good choice of questions from which to make a selection, as there are six questions in each section and only three of each have to be answered, so all well-instructed gardeners should find something to their own individual taste. Of late years, the paper has become much more one for practical gardeners; fifteen to twenty years ago the botany test was quite stiff, and a force with which to reckon. Now, wisely enough, the Royal Horticultural Society has come to a decision that for a fair gardeners' test, this first section must not be too abstruse and advanced. So each year has seen a more practical side creeping in, till now, no one can quarrel with the examination as not being eminently suitable for gardeners in every way and a real test of their proficiency.

The possession of a certificate never comes amiss, and there is nothing which makes one read to such good purpose as an examination, and surely this is always excellent, as it widens the outlook and teaches the inquirer something of other people's methods.

Gardening, undertaken intelligently, calls for much study. A good knowledge of botany is of the very greatest value in all dealings with plants. "Botany is the science which endeavours to answer every reasonable question about plants," it explains their work and life habits until the ordinary everyday happenings of our garden plants take on the aspect of a wondrous fairy tale.

Then the study of insect pests and fungous diseases is most essential, and far too little considered by a great many gardeners. Healthier and more vigorous crops would repay their labours if only they would bestow more intelligence on the treatment of these injurious insects and fungi. Some working idea as to the chemistry of soils and manures is of great help to the gardener in his cultivation of the land.

But there is, alas! a very deep-rooted idea that gardening demands no brains, that "any fool can work on the land," and that it is simply a matter of purely mechanical routine. But that is exactly what gardening is *not*: there is nothing of routine or monotony about it, but an infinite demand for imagination, originality, and organisation. Everyone who has the opportunity should encourage those who "can pot Begonias and bud a Rose," as well as those "who are hardly fit to trust with anything that grows;" for as Kipling tells us in "The Glory of the Garden," there is room for all, and "The Glory of the Garden occupieth all who come."

Such an old-time authority as Parkinson, writing in 1629, in his *Paradisus*, evidently had a better opinion of the noble calling of gardening than is held by many people at the present time, for he writes: "And I doe wish all Gentlemen and Gentlewomen, whom it may concerne to bee as careful whom they trust with the planting and replanting of these fine flowers, as they would be with so many Jewels." *M. G. Kennedy-Bell.*

DIE-BACK DISEASE OF RAMBLER ROSES.

At the meeting of the British Mycological Society, held at University College, Gower Street, on Saturday, November 15, Mr. W. J. Dowson gave an account of a die-back disease of rambler Roses which has been investigated at Wisley. The ramblers affected were two clumps of such varieties as Lady Gay, Minnehaha, and American Pillar, situated along a path on the bank of the River Wey, leading from the gardens to the Director's house. These Roses had been much overgrown by Brambles and wild Roses during the latter part of the war, when the shortage of labour made it impossible to keep the path clean.

The disease was first observed in the summer of 1921, when the leaves of long shoots turned yellow and dropped. This was followed by the dying back and turning black of the shoots. The junction beween the diseased portion and the healthy tissues was marked by a pronounced purple discoloration of the cortex. On the killed shoots, ashy-grey areas were present, bearing the remains of one or more killed buds. The affected shoots gradually died back to the ground. From the ashy-grey areas and from the pith of diseased shoots a fungus was isolated which, when artificially inoculated into healthy shoots of rambler Roses, produced the same symptoms. Shoots of wild Roses and Brambles were also successfully infected by the same fungus. In the winter and spring of 1921-22 scattered, hair-like bodies appeared, bursting out of the grey and cracked cortex, and these turned out to be the fructifications of the fungus concerned. Similar fructifications (perithecia) were also produced in the laboratory in pure cultures. Spores from these were also used to inoculate healthy plants and infection followed in nearly every case.

No signs of the presence of this fungus have been found on Brambles and wild Roses at Wisley, but during the Autumn Foray of the British Mycological Society at Keswick, in 1922, a similar fungus was discovered on dead shoots of Brambles growing by the road-side. Subsequent investigation of the Keswick fungus revealed that it was indeed identical with that originally obtained from rambler Roses at Wisley. During 1923-4 further infection experiments were carried out with this second fungus, which resulted in the artificial infection of rambler Roses, wild Roses, and Brambles.

Study of the fungus itself has shown it to be the same as that recorded so long ago as 1881 by Rehm, who recorded it on fallen Blackberry leaves in Switzerland. Rehm called it Gnomonia tetraspora var. rubi, but in 1887 Winter considered it to be a true species and renamed it Gnomonia Rubi, Rehm. In 1907 it was recorded by Edgerton in America as producing a dieback in certain species of Rubus and in 1913 Wormald came across the same fungus on dead Loganberry canes at Wye, Kent. From the above it will be seen that G. Rubi, though not very common, has a wide distribution and that under certain conditions, serious damage may be sustained by species and varieties of both Rubus and Rosa.

At Wisley the rambler Roses were probably infected by contact with Brambles or wild Roses already bearing the fungus. Infection probably takes place in spring when many of the breaking buds are killed by frosts, as it is then that the spores of Gnomonia Rubi are produced in quantity. These are washed on to the frost-bitten buds and set up infection with the results already described. It is interesting to note that in some of the infection experiments young shoots and buds were destroyed by heat and then inoculated with spores. Infection took place within a fortnight. Thus infection takes place through dead as distinct from wounded tissue.

At Wisley the disease has been checked by cutting out the diseased shoots and by taking care that Brambles and wild Roses do not again come in contact with the clumps of ramblers. In the course of his account, Mr. Dowson drew attention to the way in which the spores leave the fruit bodies, and pointed out that it was unique, but that little work had been published on the emission of spores by this class of fungi (the Pyrenomycetes).

NOTICES OF BOOKS.

Gardening in Sunny Lands.

As so many interested in gardening in the Riviera and other sub-tropical regions early discover, there is a dearth of helpful literature, so that a ready welcome is assured for any readable book on the subject. Mrs. Philip Martineau possesses the pen of a ready writer, so her readers will, no doubt, find *Gardening in Sunny Lands** gives them considerable entertainment, even though, as the author evidently realises, her's is not the authoritative work that has so long been hoped for.

A wide field is covered. There are descriptions of gardens in the Riviera and in California. Chapters deal with the pitfalls attendant on climatic conditions, wherein Mrs. Martineau very wisely insists that the European Riviera is not the El Dorado of gardening which so many novices anticipate, but a district which needs thoughtful anticipation and entails hard work. Even though Mrs. Martineau's recipe for planning a garden is so delightfully simple and calculated to make a mere man landscape-gardener feel that, peradventure, he has squandered much hard-earned money on accessories, and time on accuracy in scale drawings, all who have had any experience in making a new garden, or in re-modelling an old one, would agree with her that there should be a plan, even though the whole of the work is not to be done immediately, but the following quotation is rather staggering:—"The planning is simple, and easily done: all that is needed is a flat rule (measured), a piece of charcoal, a pencil, a round object (such as a penny), and a bit of string. With the penny you draw circles, the string with pencil attached, if fastened to a pin fixed in the centre of your paper, will give you larger circles, and more string and a peg in the ground (on the same principle) will carry out the scheme when you begin to mark out the ground. Charcoal is better than a pencil for making a rough plan, as it dusts off easily."

Annuals, which are such important features of gardens in India, are rightly recommended, though Sweet Peas might well have received more attention, for, from the reviewers' knowledge, there is a distinct need on the Riviera for help in their successful cultivation.

The lists of suitable trees, shrubs and plants, and especially the English-French "*Glossary of Gardening Terms in Common Use*," are of considerable value. But the book should have been edited before publication. Besides literal errors in the text, a glance through the plant names disclosed such mis-spellings as Agathæa celestis, Eustonia silenifolia, Diosperus and Echium Wildprattii—the last-named in bold type under a magnificent half-tone plate. Rosa Borbonica should be R. indica Bourboniana, and Cupressus horizontalis should be C. sempervirens.

The general "get up" of the book is good and the half-tone plates are excellent, but the plates in colour are irritatingly poor. *B.*

Soils and Crops.

In books dealing with the science and management of the soil we rarely find much that is directly useful to the gardener, for most of the treatises on this complex subject are written from an agricultural standpoint, and consequently the horticulturist does not feel disposed to study the subject with acute interest, particularly when he sees reference made to vast areas of land, large quantities of manures, implements which he does not use, and crops which he does not grow.

The book under review, *Soils and Crops*,* is no exception. It has been prepared specifically for the use in elementary schools in America where agriculture is taught. The first part deals with the soil, the second with agricultural crops and the third—some sixty or seventy pages—with horticulture. The author has treated his subject in an admirable manner and by the aid of carefully planned diagrams and photographs the young reader will readily understand the subject matter in the text. Furthermore, questions of a really practical nature are set at the end of each chapter for the student to answer.

It is a pity that the section on horticulture could not have been treated in the same detailed scale as the one on agricultural crops, for, as we have already implied, such a book concerning with soil science of the garden is sorely needed in this country.

---

* *Gardening in Sunny Lands.* By Mrs. Philip Martineau. Richard Cobden-Sanderson, 17, Thavies Inn, E.C. Price, 15s. net.

**Soils and Crops.*—By John H. Gehrs, pp. 444, Figs. 221 Price 6/6 net. Macmillan and Co., New York and London.

HARDY FRUIT GARDEN.

PEACH TREES AT WROTHAM PARK, BARNET.

WROTHAM PARK, Barnet, the beautiful Hertfordshire residence of the Earl of Strafford, includes a most glorious park and extensive flower gardens, but although these, like those of the majority of large estates nowadays, are not maintained in their former condition of beauty, owing chiefly to the greatly increased expense, the fruit and vegetable gardens are still a great source of pride to Mr. Markham, the gardener, who, as many of our readers are aware, is an exceptionally clever fruit grower. The kitchen gardens include a considerable amount of wall space, and the walls are covered with trained fruit trees, including numbers of Peaches and Nectarines which do remarkably well. In common with most gardens, the Peach trees at Wrotham Park have given exceptionally fine crops this past season, and the one illustrated in Fig. 138 carried no fewer than two hundred fine fruits. The variety is Rivers's Early York, which Mr. Markham considers one of the most dependable Peaches for cropping in the open, as the fruits attain to a large size and are of excellent flavour. The amount of wall space covered by this particular tree is twenty feet by ten feet. It is a remarkably fine specimen, not only for its vigour and cropping, but also for the excellent manner in which it is trained.

The total amount of wall space devoted to Peach culture at Wrotham Park is one-hundred-and-twenty yards, and as these walls are ten feet high, they admit of a considerable amount of top space for the trees. The wall has buttresses nearly twenty feet apart, and Mr. Markham has planted one tree between each pair of buttresses, so that each specimen has ample room for expansion. The method of thin training is practised, and the trees are not overcropped, as Mr. Markham considers that this would militate largely against the development and maturation of the young shoots on which the next season's crop is produced.

With regard to varieties, the earliest of the Peaches at Wrotham Park is Alexander, followed by Duchess of Cornwall, Hale's Early, Rivers's Early York, Dymond, Stirling Castle, Bellegarde, Royal George, Violette Hâtive, Sea Eagle, and finishing with Princess of Wales. The Nectarines grown are Early Rivers, Lord Napier, Dryden, Pineapple and Humboldt. At one time, Mr. Markham informs us, the winter pruning and training of the branches was deferred until late in the season, but in recent years the work has been carried out much earlier with, Mr. Markham states, better results.

FRUIT REGISTER.

PEACH THAMES BANK.

IT is a question if this Peach became generally cultivated at any time, though, owing to its handsome appearance and good flavour, it well deserves that distinction. It was raised by Mr. Rust, previous to taking charge of Eridge Castle Gardens, and I well recollect his reference in *The Gardeners' Chronicle* to its first fruiting, as going, "basket in hand," to gather a dish of its fruit, with a view of placing it before the Fruit Committee of the Royal Horticultural Society, and finding it had disappeared.

I first saw the variety when I took charge of the Hendre Gardens, and subsequently exhibited it, together with a dish of Royal George, at a show held at the Alexandra Palace. The dish of Royal George was awarded the first prize, and the judges crossed out the name Thames Bank on the other dish and substituted Exquisite, which they afterwards corrected. It certainly does resemble this handsome variety by being yellow-skinned with a flushed cheek. *T. C.*

VEGETABLE GARDEN.

RAISING VEGETABLES UNDER GLASS.

MANY gardeners do not take the fullest advantage of their heated greenhouses in forwarding seedlings of vegetables for eventually planting them out at an earlier date than is possible by the ordinary method of sowing out-of-doors.

Every kind of vegetable that may be transplanted as seedlings with reasonable prospect of success, is amenable to forwarding in this manner under glass, including Globe Artichokes, Asparagus, Beans, Beets, Broccoli, Brussels Sprouts, Cabbages, Cauliflowers, Celery, Celeriac, Cucumbers, Leeks, Lettuces, Marrows, Mint, Onions, Parsley, Peas, Potatos, Sage and Tomatos.

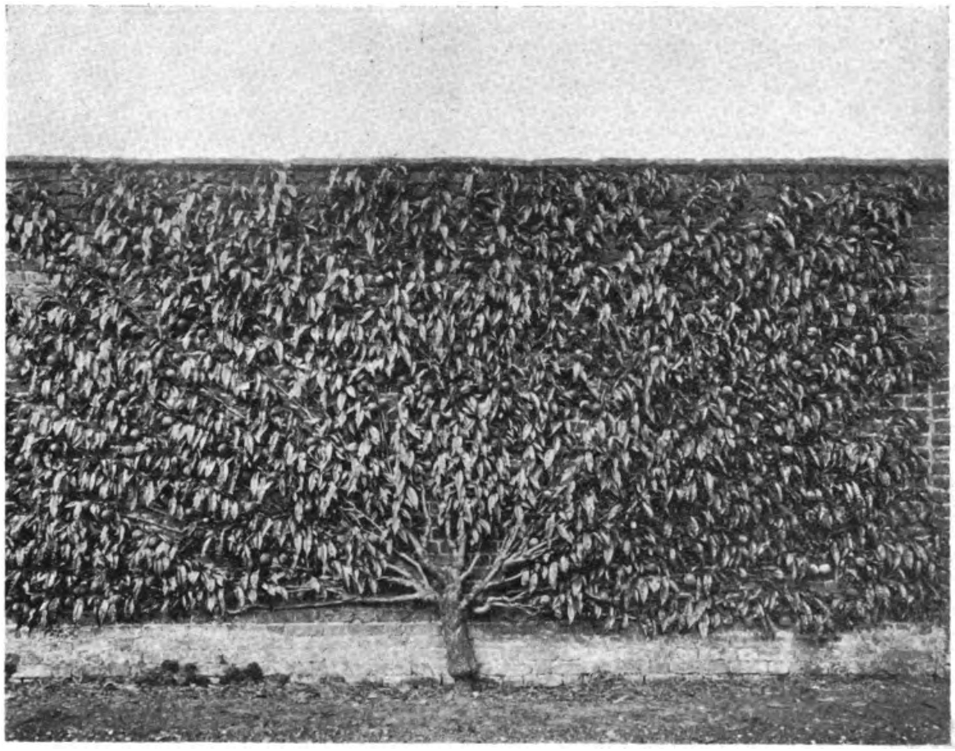


FIG. 318.—A FINE SPECIMEN OF RIVERS'S EARLY YORK PEACH AT WROTHAM PARK, BARNET.

By raising vegetable seedlings under glass earlier and better crops are thereby secured, and fuller use is made of the garden. Plants make but very little and very slow growth before April, yet by sowing the seeds in a heated structure during January and February we are able to get the plants well forward by April; and when they have recovered from the slight check occasioned by the transplanting, they will make rapid growth, responding to the increased warmth of air and soil. For instance, Onions sown outside in the spring are by the middle of April little more, in the majority of cases, than peeping through the soil. Those, on the contrary, raised under glass may be planted out at about that time, and would be of a size approaching the thickness of a lead pencil. By adopting this method there will be less need for worry if the weather during March makes outdoor sowing impossible.

The seeds must not be sown so early as to allow the seedlings to become large before they are planted out; the latter must be kept sturdy by being allowed sufficient air and light, and not grown in excessive warmth; they must be well hardened before they are planted out, and must usually receive some slight protection after they are planted until they are quite accustomed to outside conditions.

In the case of the Globe Artichoke there is an advantage in removing strong suckers from the plants in the autumn, potting them and growing them in a cold frame protected from frost and planting them in the open during April.

Where a new bed of Asparagus is to be made by sowing seeds, there is an advantage in sowing three seeds in a four-inch pot in February, and growing the seedlings in gentle heat to be planted in April or May. Such plants would obviously make more growth during their first year than those raised from seeds sown out-of-doors during April.

Broad, Dwarf, and Runner Beans may all be raised under glass either in a greenhouse or frame. Broad Beans may be sown in pots or boxes in the autumn and germinated in a cold frame. Another plan is to defer the sowing until the third week of January, and then to sow in pots or boxes in a heated greenhouse. Sown in heat before that date, there is a likelihood that the plants will become too large for satisfactory transplanting before the outside weather is sufficiently warm. Dwarf Beans will not need to be sown for planting eventually outside until mid-April at the earliest. Runner Beans may be sown at the same time or perhaps a week or two later. Both Runner and Dwarf Beans may be sown in pots or boxes. If sown in pots I advise that two seeds of Runner Beans and two of Broad Beans be placed each into a four-inch pot, the seedlings to be planted in due course without separating them. In the case of the Dwarf Beans sow three seeds in each pot. If boxes are used for any of these Beans, then I advise that three seeds in the case of Dwarf Beans, and two in the case of Runner and Broad Beans be placed in each hole made at four inches apart. When they are finally planted out there should be no division of the groups. The advantage of this method is that the roots thus get entwined, and on being lifted they hold more soil and therefore are not subjected to so great a check on removal as would be the case if the seeds were sown and transplanting done singly.

There is usually no need to grow very early Beets, for old roots properly stored may be depended on to maintain a succession

until the earliest pullings from the Globe type are available, but it may happen that young roots are preferred. With care Globe Beets may be transplanted successfully. The seeds should be sown thinly in a box in March and the seedlings planted out when they are suitably hardened. As these seedlings do not transplant readily, it is not advisable to prick them off before planting them out, as is usual with most other subjects.

It is seldom necessary to sow Broccoli under glass, but if desired, seeds may be sown in February or March and the seedlings planted out when they are large enough, after being grown sturdily.

Brussels Sprouts lend themselves admirably to forwarding under glass. Seeds may be sown during January or February. My method is to sow seeds about the third week in January, to prick off the seedlings in due course at two inches apart in boxes, and when they have so far advanced as to threaten to become crowded to transplant them at four inches apart in a cold frame. The planting in the open may take place at the end of April or early in May, and useful Sprouts may usually be gathered from such plants during August.

Seeds of a choice variety of Cabbage may be sown in late January or February and treated as advised for Brussels Sprouts. The object is to have tender, and quickly-grown Cabbages for use during the summer.

The usual method of providing early Cauliflowers in June or early July is to sow seeds outside in late August, and to prick off the seedlings in a cold frame, where they will be wintered with just sufficient protection to keep them growing slowly. Such plants will usually be ready for planting out early in April.

It may, however, be preferred to forward them in heat instead of having the trouble of attending to a cold frame, and, in any case, a successional supply of plants may be arranged for by sowing seeds in a warm greenhouse in January, the seedlings being pricked off later into boxes or frames.

The first sowing of Celery may be made at the end of January, and other successional sowings may be made as required. The seedlings should be pricked out first in a box at two inches apart and later removed to a frame, or placed four inches apart on an outside bed.

Leeks require a long season of growth, and it is not always possible to sow early outside. Even so, plants raised under glass would be much larger at the time of planting out. I prefer to sow about the third week in January and to prick out the plants into boxes at three inches apart, harden them off and plant them out-of-doors early in May.

Lettuces may be treated in precisely the same way as recommended for Cauliflowers, the seeds being sown outside in August, and the young plants pricked off and wintered in a cold frame. Seeds may also be sown in heat after Christmas, and during January and February to ensure a succession, the seedlings to be pricked off in boxes and planted out after being well hardened. Both the Cos and Cabbage kinds may be grown in this way.

To ensure an early supply of Marrows it is essential that the seeds be sown under glass. Unless they are to be ultimately grown under glass the best time for sowing the seeds is at the end of March or early in April. If they are sown in pots there will be no need to subject them to much disturbance at the time of planting. Seeds may be sown singly in three-inch pots and the plants removed to six-inch pots when the smaller ones are filled with roots. They may be planted out during May if the protection of a hand-light is given, or in early June if such protection is not forthcoming. I usually sow two seeds in a three-inch pot, putting both seeds in the one hole made with a setting peg. The two plants are treated as one and are planted out together, but trained in different directions.

Mint and Sage may be treated alike. The only way in which these may be regarded as being forwarded under glass is when the greenhouse or frame is used for the propagation of cuttings. The cuttings may be inserted in a warm house any time during the spring, and will root with far less trouble than if they were put outside.

The Onion lends itself to being forwarded under glass with greater success than most other vegetables. Seeds may be sown at any time after Christmas until the end of February. My plan is to sow during the week following Christmas. This vegetable will respond to more heat than most others. The seedlings should be pricked off when they are quite small, in deep boxes of rich soil, at three inches apart, and may remain in these boxes until they are planted out about the middle of April. The actual time of planting will depend on the prevailing weather. Sometimes the seeds are placed one inch apart in the seed box, but I doubt if this is worth the extra time and trouble.

When there is need for getting an early supply of Parsley, seeds may be sown in a pan or box during January. The seedlings should be pricked out in boxes and planted during April or May. Often there is no need for this treatment, but it is well to remember that Parsley will transplant with ordinary care.

Peas may be forwarded in a variety of ways. In the autumn, seeds may be sown either in pots or in boxes and germinated in a cold frame. If the sowing is deferred until after Christmas it is usual to afford a little heat during the early stages. If three-inch pots are available and the extra space can be spared, this is certainly the better plan, three or four seeds being put into each pot. Our forefathers used to sow Peas in grooves made in turves, or used wooden troughing. Personally I see no need for this; for if the plan I am about to explain is adopted the resulting plants will transplant quite readily, and with a minimum of disturbance. Failing the use of pots I choose deep boxes, make holes in the soil an inch deep and four inches apart and put three peas into each hole. These groups are in due course planted without division, and as the roots get entwined they carry with them a fair amount of the soil in which the seeds were sown. Both early and second-early Peas may be treated in this way, it being a more certain way than sowing outside during the early months of the year. When sown in heat I find that the middle of January is quite soon enough for the first sowing. Peas will not succeed if much fire-heat is used.

The only way in which Potatos may be said to be forwarded under glass is when they are put in the greenhouse to encourage them to sprout. Usually a cool house will be sufficient for this purpose. If they have been in the warm house for some time it will be necessary to move them to a cold frame to harden the growths somewhat before planting them in the comparatively cold earth. The time of introducing them to the greenhouse will depend on the time they are likely to be planted.

Tomatos intended ultimately for growing and cropping in the open should be raised from seeds sown during March. It is best to sow in good time so that the plants may be grown sturdily, and in order that they may be well rooted in six-inch pots and be bearing a truss of flowers if not a truss of fruit at planting time. Sow the seeds in a pan, prick off the seedlings in boxes at two inches apart, then remove them to three-inch pots and later to six-inch pots; harden the seedlings and plant them in the open at the end of May or early in June.

All the plants I have dealt with must be grown sturdily, be well hardened, and lightly sheltered after planting by setting boughs of evergreens near them for a week or more.
William F. Rowles.

NURSERY NOTES.

CARNATIONS AT BUSH HILL PARK.

MESSRS. STUART LOW AND COMPANY'S Nursery at Bush Hill Park, Enfield, is one of the largest in the London area, and it contains an enormous amount of glasshouses in which many thousands of tender decorative plants are grown for the London market and to supply the firm's customers in all parts of the country.

The stocks of Palms, Ferns, Dracaenas, Ericas, Rhododendrons, Azaleas, Veronicas, Acacias, and other popular florists' plants occupy house after house, and the importance of this branch of the market nursery business is revealed by an inspection of the huge stocks in this single establishment.

Cyclamens and Primulas are also extensively cultivated by the firm, and their strain of the former has a high reputation amongst growers, but the flowers that interested us most were the perpetual-flowering Carnations, for, as most of our readers are aware, much of the pioneer work in this country in the development and improvement of this valuable greenhouse plant was done in this nursery. A whole section of glasshouses is given over to the growing of the many thousands of perpetual-flowering Carnations that form one of the largest stocks in the country.

The parents of these Carnations, the old Tree Carnation and the early, American Carnation, did not conform to the standard set up by the oldest florists, for the flowers were too thin and fimbriated, and although the plants were free-flowering, they were generally very leggy. The American type too often lacked scent in the blooms. The perpetual Carnation of to-day is quite a different flower from that of a generation ago, and vast improvements have been effected since the first efforts were made. Many of the newer varieties raised at Bush Hill Park have the qualities of perfume, such as is found in the fine, deep salmon variety, Lady Inverforth, and White Pearl: rich colour and good habit such as in the salmon Eileen Low, whilst the free-flowering qualities of most of the modern varieties far exceed that of some of the older favourites. The deep heliotrope shade of Arnos Grove is an example of progress in the development of colour, for it is superior to the original variety of this shade, the well-known Mikado, but Messrs. Low consider that their greatest triumph in the combining of rich scent, fine colour, large size of bloom, and good habit of plant is their fine, crimson variety, Sir Phillip Sassoon, for which they received the Royal Horticultural Society's Award of Merit at Chelsea this year. This variety will not be put into commerce until next spring. It is of the same shade as the Old Clove Carnation, and the blossoms are nearly as large as those of Carola, but it has not the defective habit of this variety, for one of its outstanding qualities is that it makes a good plant.

In reviewing the work of this firm in the improvement of the greenhouse Carnation, reference must be made to the fine variety Baroness de Brienen and its modern counterpart, Eileen Low. Baroness de Brienen is still cultivated very extensively, but it is slow growing, and not so free in flowering as the newer Eileen Low.

Many of the perpetual Malmaisons have originated at Bush Hill Park, including such fine sorts as the Hon. Charlotte Knollys, crimson-scarlet; Mrs. Myles Kennedy, a perpetual type of the Princess of Wales with the Old Clove perfume; Hugh Low, Rose-pink; and Yvonne Holmes, salmon, which is almost as free-flowering as an ordinary perpetual variety.

The method of propagating and cultivating these Carnations is similar to that for true perpetuals, except that the perpetual Malmaisons require more warmth in winter, for which reason they should be grown in the warmer end of the Carnation house.

PUBLIC PARKS AND GARDENS.

THE Fulham Borough Council intend to plant four thousand flowering and berry-bearing shrubs in the land recently acquired from the Bishop of London to form an extension to Bishop's Park. Part of the ground has been sown with grass seeds and flower beds are to be made in this area. At one end a rock garden has been constructed with Yorkshire stone and plans are being prepared for a large herbaceous border at the west-end of the park.

SCHEMES for the unemployed during the present winter, involving a cost of £16,336, have been recommended by the Glasgow Parks Committee and adopted by the Finance Committee of the Corporation. The allocations are as follows:—Victoria Park, £5,000; Bellahouston Park, £4,000; Glasgow Green, £3,000; Maxwell Park, £1,000; Ninn Park, £700; and Bellahouston Park bandstand, £2,636.

IN commemoration of her year of office as Mayor, Dame Janet Stancomb-Wills has given some fifty acres of land to the town of Ramsgate for a recreation ground and a sum of £1,000 to lay it out.

IT is proposed to make a third bowling green in the Clarence Park, Weston-super-Mare, and the local Council has instructed the surveyor to submit an estimate of the cost.

EPSOM Urban District Council proposes to lay out a new recreation ground near Pound Lane at a cost of £3,296.

THE Town Council of Reading has decided to expend a sum of £970 in laying out Cusden's Meadow, Basingstoke Road, as a recreation ground.

BLACKPOOL has made application to the Ministry of Health for powers to borrow £221,200 in connection with improvements. A considerable amount of this sum will be devoted to sea defence works and £24,000 to the laying out of land on the east side of the promenade at South Shore. This latter work will entail a total expenditure of £81,527, but for the present £24,000 will be expended in making a start, the proposal being to make further application for borrowing powers as the scheme develops.

HOME CORRESPONDENCE,

Lonicera nitida.—Mention of Lonicera nitida as an evergreen hedge, in recent issues of *The Gardeners' Chronicle*, should prove interesting to those about to form hedges and wishing to make a pleasing change from the usual subjects. The rapidity with which this shrub grows in hedge form makes it an ideal plant for the purpose. L. nitida thrives well on a thin, chalky soil, is a valuable addition to seaside shrubs, and equally at home in the North or South. I recently had the pleasure of inspecting a batch of ten thousand superb examples of Lonicera nitida and, incidentally, saw a compact circular hedge, ten feet in height, which surrounded a summer house. *Sidney Legg, Parks Dept., Margate.*

Height of Sweet Peas.—What is the record height of Sweet Pea growth this season? We had three double rows, containing about 300 plants, and not one plant was less than twelve feet high; many were thirteen feet and fourteen feet, while the tallest were fifteen feet four inches and fifteen feet two inches respectively. The combined length of the six tallest plants was eighty-nine feet four inches. All the plants were very strong, and the flowers were very fine, with stems eighteen inches to twenty-two inches long. The leaves were eleven inches across. No doubt the moist season had much to do with this vigorous growth. *R. Smith, The Gardens, Fritwell Manor, near Banbury, Oxon.*

Pernettyas.—I was very interested in the note on Pernettyas by *J. N.* in your issue of November 15, but I cannot accept his reason for the non-fruiting of this shrub in certain gardens. I wrote you on this matter some time ago, and since then I have become more than ever convinced that the fault lies with the nurserymen. Of the one hundred plants supplied about ten years ago only five have fruited; these were originally planted in a bed of very poor soil—decayed sandstone—and when I took charge some six years ago, the berried specimens were among the others. I removed these and planted them separately; some are planted as dot plants among dwarf Ericas, chiefly forms of E. carnea. They are about ten feet apart, covered with fruits, and have reached a height of three to four feet. Some self-sown seedlings from these plants are already fruiting freely. Some of the non-fruiting plants in the original bed I transplanted into good soil, but they have not borne a single berry, and I am now destroying them. The Pernettya is the best of all berried shrubs, and should be in every garden where fruiting shrubs are appreciated, but it is necessary to obtain the proper variety. The recent notes on the colouring of Cercidiphyllum are also interesting; we have something similar occuring here with Liquidamber styraciflua; one tree shows a very rich, mahogany colour, and although its leaves commence to colour quite early in the season, the foliage hangs on the tree until very late in the season. Five other trees planted in the same group are quite poorly coloured as compared with the one cited. Incidentally, the highly coloured tree has smooth bark and the others have bark more or less corrugated, but the rougher the bark the poorer the autumn colour. I used to believe that all Liquidambers had very rough, corky bark. *Evan G. Jones, Shalesbrook Gardens, Forest Row, Sussex.*

Young Gardeners of To-day.—I was surprised at the note under the above heading by *H. W. Stenning* in *The Gardeners' Chronicle* of November 14. It is a sorry state of affairs if the head gardener of to-day is neglecting his duty of instructing those under him. In my opinion the young gardener's future is largely determined by the amount of interest he takes in his work and by the interest the gardener takes in him. I worked for twelve years under glass, but was encouraged to visit the kitchen and flower gardens in the evenings, and always found the head gardener ready to assist and encourage me in my studies. When inside foreman under Mr. James Gibson—then at his zenith as an exhibitor of vegetables—he would often call me out of the houses, and the journeymen also, to see some special work in progress in the kitchen garden and he would explain the method. If all head gardeners did this they would find the young men ready to gather knowledge. Very rarely does a young man object to learning kitchen gardening or other outside work; the mistake is that he does not receive encouragement to do so. I have known cases where inside men have been found in the kitchen garden during the evening by the head gardener and threatened with discharge if found there again. When filling my first position as "head" I practised Mr. Gibson's methods of instructing the young men—to my own advantage — for I was able to exhibit vegetables successfully, winning four medals at the International Show of 1912, and beating Mr. Gibson in two classes; he was the first to congratulate me. I mention this to show what a little encouragement can do for a young man and I hope that *H. W. Stenning* will realise that the blame for so-called ignorance of kitchen garden work does not always rest with the young gardener. He will find no lack of enthusiasm in the young gardener of to-day, at least that is my experience. I venture to advise those young gardeners who are working under glass to go round the kitchen garden at least once a week and make notes of the work that is being done, leaving a space in the book to note when a certain crop comes to maturity and if successful or not. This method of note taking is very useful, as it provides a basis for "timing" various crops. *A. G.*

——I read with great interest on page 340, the remarks on "Young Gardeners of To-day." Many young men take the whole of their early training under glass; this is a mistake, but it is so, simply because the men consider it far superior to outside gardening. They are also well aware they have a more comfortable time under glass than outside. But this method of training is not new; some of the older gardeners suffered it and it is not always pleasant to be employed under such men. Some years ago I was engaged to take charge of a rock garden and the gardener told me he knew little about outside gardening. Alas! there are those who never confess their ignorance. If an under-gardener is employed in a large establishment where indoor gardening is carried on extensively, it is obvious that if his interest lay in that direction he would find time to study vegetables and hardy fruit. The witticism that "an Englishman makes a good plantsman, but it takes a Scotsman to grow vegetables well," I have not heard before, but having gained experience in both English and Scottish gardens, and two of the former were in charge of Scotsmen, I am in a position to offer the opinion that a Scotsman receives a better all-round training than the average Englishman does. A kitchen garden foreman holds a very important position in big establishments, for it needs a great deal of forethought to maintain a supply of vegetables, salads, and fruits; the position demands as much interest and intelligence as in the case of other departments. He has to admit his position on the garden staff in general is that of third man, and he is also reminded of the fact by his pay. There are kitchen garden foremen who can "carry-on" at all times with little or no supervision but whose pay is practically the same wage as that of his assistants. I may mention one garden where the head gardener is paid 60/- per week, the inside foreman 40/-, and the kitchen garden foreman 35/-. Does the last receive due encouragement? *E. M. W.*

The Heating and Ventilating of Greenhouses.—The meeting at the Engineers' Club of the Institution of Heating and Ventilating Engineers and the Lea Valley Growers' Association to hear Mr. Shoults' paper, will I think, direct attention to the need for better methods of heating greenhouses. The difficulty, as you state in your report of the meeting in your issue of November 15, appears to some extent to be that the growers do not quite know what they want. I was present at the meeting and was rather surprised that the growers could give so few figures as to what temperature they required and what percentage of humidity was considered best for different plants. This question of humidity is, to my mind, very important, and is certainly one matter that requires some research to be devoted to it. Mention was made of a hot-air system of heating having been tried and found unsatisfactory, and this is to be expected, for unless the air was humidified, it would be bound to fail. It is to be hoped that the matter will not be allowed to drop and that engineers and growers may combine to improve existing conditions in what is an important industry. The growers must, however, give the engineers some data to work upon, and be prepared to spend a little more money on investigations than they have been willing to in the past. *A. Fleming Browne.*

SOCIETIES.

HITCHIN CHRYSANTHEMUM.

The exhibition of the Hitchin Chrysanthemum Society, held in the local Town Hall on Thursday, the 13th inst., was the finest held since the war. The quality of flowers, fruit and vegetables was of the highest possible standard. Competition was fairly keen and most classes were exceedingly well filled, especially that for six vases of single Chrysanthemums, which made a grand display.

Sir Charles Nall-Cain, Bt., Brockett Hall, Hatfield (gr. Mr. T. Pateman), won the twenty-five guinea Challenge Cup offered as a first prize for six vases of Chrysanthemums, three blooms of one variety in each vase, for the fourth time in succession, and the Cup now thus becomes his property He had good specimens of Louisa Pockett, Mrs. R. C. Pulling, Mrs. Algernon Davis, William Rigby, Mrs. Gilbert Drabble and Majestic; the second prize was won by E. Martin Smith, Esq. (gr. Mr. G. E. Miller), his best blooms being Mrs. B. Carpenter, Majestic, and a splendid vase of Louisa Pockett. One bloom of the last-named variety was adjudged the best bloom in the show.

In the class for four vases of Japanese blooms, three blooms of one variety in a vase, a Silver Challenge Cup, valued at six guineas, was won for the second time by B. Franklin, Esq., with grand flowers of Majestic, Princess Mary, Wm. Rigby and Mrs. F. J. Fleming. The second prize was awarded to Mr. W. G. P. Clark, Secretary of the Society. This exhibit comprised a more even set of flowers and the judges must have had some difficulty in making their awards. Third, F. Flack, Esq. (gr. Mr. Hawksworth).

In the class for six vases for single Chrysanthemums, six blooms in a vase, the competition was very keen. E. Martin Smith, Esq., was the winner of the first prize with a very meritorious exhibit, Mr. J. G. Rusted being placed second. For six Japanese blooms, distinct, shown in two vases, Sir Charles Nall-Cain was placed first and E. Martin Smith, Esq., second. In the class for a vase of three white blooms the same exhibitor was placed first, but in the vase for three coloured Japanese blooms, B. Franklin, Esq., led with excellent blooms of Majestic. For a vase of Chrysanthemums arranged with any foliage, Sir Charles Nall-Cain won the first prize. The best arranged vase of singles was shown by E. Martin Smith, Esq., several exhibitors being disqualified for exceeding the stipulated height of two feet six inches. These were placed in a separate class and rejudged. The winning vase was shown by Major Harrison, Kingswaldenbury (gr. Mr. A. J. Hartless), Sir Charles Nall-Cain being awarded the second place. A Bronze Medal presented by *Gardening Illustrated* for the best vase of Single Chrysanthemums, was awarded to the first prize winner.

For a vase of twelve Carnations, Mr. E. Martin Smith was placed first. Winter-flowering Begonias were well shown, and in the class for three Begonias other than Gloire de Lorraine, Sir Henry Whitehead, Stagenhoe Park (gr. Mr. Carter), was a worthy prizewinner, showing the var. Optima in great style; in the class for three Begonias of the Gloire de Lorraine type, Sir Charles Nall-Cain was an easy winner.

Cyclamen were not up to the high standard generally shown at this exhibition, Mr. Martin Smith being awarded the first prize, and Messrs. Abbiss Bros. the second. Messrs. Abbiss Bros. were the most successful exhibitors in the class for a group of Chrysanthemums, this exhibit being very tastefully arranged at one end of the hall.

Fruits were shown well, and in the class for a collection arranged on a space six feet by three feet, Major Francis-Francis (gr. Mr. Gillings) won the Silver Challenge Cup, offered by Sir Charles Nall-Cain, for the second time, with a very good exhibit of Apples, Pears, Grapes, etc.; second, Mr. Wheeler. In the class for six dishes of Apples, distinct, the first prize was awarded to Sir Charles Nall-Cain; second, Major Harrison. The first-named exhibitor was also placed first for three dishes of dessert Pears, three dishes of culinary Pears, and two bunches of black Grapes. Major Harrison was the first prize-winner for white Grapes.

Vegetables were equally well shown. Messrs. J. Carter and Co. offered a Silver Challenge Cup as a first prize for a collection of nine distinct kinds. Sir Charles Nall-Cain was placed first, and won the cup outright, this being the third time of success; second, Major Harrison.

In Messrs. Sutton and Son's class for six distinct varieties of vegetables, the same exhibitors occupied similar positions. In the open classes for single dishes of vegetables, the principal prize-winners were Major Harrison, E. Martin Smith, Esq., and Sir Charles Nall-Cain.

In the Amateur Section, flowers, fruits, and vegetables were particularly good. Mr. W. G. P. Clark was the most successful exhibitor in the class for three Japanese Chrysanthemums, distinct, and in several other classes. Mr. A. W. Ansell showed the three best dishes of Apples, distinct, and Mr. W. G. P. Clark the best dessert Pears. The principal winners in the vegetable section were Mr. W. Muddle and Mr. W. F. Green.

LANCASTER CHRYSANTHEMUM.

On Wednesday, November 12, the first exhibition of the Lancaster Chrysanthemum Society since the war was held in the Ashton Hall, Lancaster, the show being opened by the Mayoress (Mrs. Thurston), who was accompanied by her father, the Mayor (Alderman G. Jackson). The Corporation's park superintendent, Mr. W. J. Dearden, staged a non-competitive group, and two excellent displays were staged for competition by Sir Norval Heline (gr. Mr. J. Atkinson), Lancaster, and Mr. W. Smith, Morecambe, the former easily winning the cup which he has held since pre-war days. In the section for cut blooms, the first prize, with a rose bowl presented by the late Lady Storey, for eighteen Japanese varieties was awarded to Mr. J. Middleman, Barrow, who staged splendid blooms of Majestic, Princess Mary, Mrs. M. Sargeant, Mrs. B. Carpenter, and Miss J. Boolds; he was also successful in the classes for twelve blooms, distinct, six blooms, distinct, three white and three yellow blooms, and his best flowers in these classes were Mrs. A. Davies, Daily Mail, Mrs. G. Monro (of grand colour), Mrs. R. C. Pulling, Mrs. J. Gibson, Mrs. M. Sargeant, N. Chittenden, General Allenby, and Mrs. Fleming. The same exhibitor was the first prize-winner in the class for two vases of single Chrysanthemums with fine examples of Susan and Jessica. Doubtless, owing in part to the very bad season, the other decorative and single classes were poor in comparison with previous shows, only Mary Richardson, Florrie King, Ceddie Mason, Joan Edwards, and Margaret Nichols finding favour among Singles, while among decorative varieties Romance and Blanche Poitevine were the only varieties shown in good condition.

Exhibits of plants in pots were not so good as usual. Mrs. E. Sharpe, Halton Hall, staged six glorious plants of Begonia Gloire de Lorraine. Mrs. F. Emmott obtained first prize for a table decoration with a tastefully arranged display of Mary Richardson Chrysanthemum.

Fruits and vegetables were excellently shown, and in the class for six Apples, Mr. M. Bonney obtained the premier award, showing good specimens of Golden Noble, Lord Derby, and Charles Ross, while in the single dish class he was also first with the variety Peasgood's Nonesuch. For three dishes of Apples, Mr. J. Cookson obtained the premier award, the varieties Golden Spire and Charles Ross being particularly fine. Mr. W. Robinson, Forton, was placed first for three dishes of dessert Apples, and he also led for three dishes of Pears with Pitmaston Duchess, Grosse Calebasse, and Durondeau, and for a collection of vegetables, having splendid examples of Onions, Carrots, Leeks, and Parsnips.

NEWCASTLE AND DISTRICT HORTICULTURAL AND MUTUAL IMPROVEMENT.

The above Society has just cause to feel proud of its work during the past year, for at the annual meeting held recently, it was recorded that no fewer than one hundred new members had been enrolled and that interest in the Society was spreading over a very wide area. Mr. R. E. Richardson was re-appointed chairman of the Committee and Messrs. J. Hether, J. Kirkbridge, and J. Dick were elected vice-chairmen. Mr. A. Standing and Mr. C. Dillon again hold office as honorary secretary and assistant secretary respectively, but, unfortunately, Mr. W. Rawson was unable to accept the treasureship, so Mr. G. W. Sandwell was elected in his stead. There is a satisfactory balance of £12 9s. 4d.

The third annual show of Chrysanthemums, which was held at the Church Institute, was opened by the Lord Mayor of Newcastle (Councillor W. Lee), and throughout the two days a large number of visitors attended. The quality of the exhibits was very good, and demonstrated that even in the smoke-laden atmosphere of Newcastle the Chrysanthemum may be brought to a high state of perfection.

In the open classes, Mr. G. H. Stansfield (gr. Mr. J. Haley), Monkseaton, gained the first prize for six Japanese Chrysanthemums, and in the members' classes, Messrs. W. H. Howard, W. Lamb, W. Bright, J. Haley, and C. J. Dillon were among the principal first prize-winners in classes devoted to Chrysanthemums, the last-named exhibitor being awarded the "Pettinger" Gold Medal for the highest number of points gained in the show. Mr. J. Butler secured four first prizes in the Amateurs' section for Chrysanthemums. Vegetables and fruits were also well shown, and in the open class for three pot Leeks, Mr. C. Rust, Gosforth, showed the best specimens.

BLACKPOOL AND FYLDE HORTICULTURAL.

After an interval of eleven years the Blackpool and Fylde Horticultural Society revived its annual show, which was recently held in the spacious Indian Lounge at the Winter Gardens. Eighty classes were provided, and in the open section for Chrysanthemums Mr. Filton, a well-known local grower, was the most successful exhibitor, securing the first prizes in the classes for a semi-circular group of pot-grown plants; twenty-four cut blooms of Japanese varieties; twelve cut blooms of Japanese varieties; twelve exhibition blooms, and six distinct Chrysanthemums. Mr. J. Hacking was the only exhibitor in the class for a table group of Orchids and he showed Cattleyas, Odontoglossums, Cypripediums and Dendrobiums in fine quality, and in addition to the first prize he was awarded the Silver Medal of the Manchester and North of England Orchid Society. The same exhibitor also showed the best three specimens of Cypripediums, and was awarded the first prize for a group of single Chrysanthemums.

In the local classes Mr. W. Duckworth, Kirkham, was the foremost prize-winner in the classes devoted to Chrysanthemums, and in the amateurs' section Mr. J. C. Capers, Marton; Mr. R. Lewtas, Hambleton, and Mr. J. H. Porter, Bisham, were the prominent exhibitors.

The only exhibit in the open classes for a collection of vegetables was shown by Mr. J. Webster, Marton Moss; the quality of the produce shown was of a very high standard, and he was deservedly awarded the first prize. Mr. T. E. Rushton, Hornby Road, excelled in the class for two bunches of Grapes, while in the local and amateurs' sections Mr. J. Fishwick, Mr. W. Yates, both of Marton Moss, and Mrs. Hall were the chief prize-winners for fruits and vegetables.

THE ROYAL OXFORDSHIRE CHRYSANTHEMUM.

The autumn exhibition of this Society was held in the Town Hall, Oxford, on Thursday and Friday, the 13th and 14th inst., and it was very gratifying to see so many visitors present. It is a pleasure to report a great improvement in the quality of the exhibits, and also the effective manner in which they were staged. There were three groups, not for competition, and that displayed by Mrs. G. H. Morrell, of Headington Hill Hall (gr. Mr. A. Gibson), was a magnificent one, and the admiration of all; it was awarded a fifty guinea Cup presented by Messrs. Grimbly, Hughes and Co., Ltd., Oxford, for the best exhibit in the show. The finest blooms were Louisa Pockett, Majestic, Daily Mail, Mrs. Tickle, W. Turner, Queen Mary and Princess Mary. Mr. Gibson also had a very fine exhibit of Cattleya Bowringiana, forming a belt across the whole length of the platform.

The group shown by Dr. and Mrs. J. Massie, Charlton Lee, Headington, contained some very excellent blooms and was staged by their gardener, Mr. L. Dawes, in an effective manner. It was awarded a Large Gold Medal. Messrs. Gee, of Banbury Road, had an excellent group and was also awarded a Gold Medal. Mr. G. Prince and Mr. J. Mattock exhibited some excellent Roses. Mr. A. Rowles, of Market Street, showed an instructive trade exhibit. The flowers and fruits sent by Capt. Brassey (gr. Mr. Quinn) and Sir Mortimer Singer (gr. Mr. Johnson) were a great acquisition to the show.

Mr. W. A. Adams showed a very clean and even collection of Potato tubers. Mr. W. Smith staged a good collection of Onions and Mr. W. Jacobs also displayed some very fine Onions.

In the competitive class for a group of miscellaneous plants, Mr. Town was placed first for a good assortment of choice plants: second, Messrs. West and Son, who gained the first prizes for Primulas and for Begonias. Mr. Town excelled in the class for six specimen table plants; Messrs. West and Son were second.

In the class for twenty-four Japanese Chrysanthemums, distinct, Mr. Quinn took premier honours with fresh flowers of an even size. For twelve blooms, distinct, Mr. Johnson was first, and this same exhibitor also won first prize for six white blooms, for six yellow blooms, and for six blooms of any other colour. Mr. G. Parker was second in the class for white blooms and Mr. Town second in that for yellow blooms.

In the class for nine varieties, three blooms each, in vases, a most magnificent array of flowers was staged, and here Mr. Quinn took first prize. His collection contained large flowers of refined quality, his best blooms being Mrs. A. Davis (extra good), Majestic, Princess Mary, Mr. R. C. Pulling, Norman Chittenden, and W. Rigby. Mr. Johnson, who won the second prize, had excellent blooms of Louisa Pockett, W. Turner (very fine), and General Petain. The Rev. R. H. Allington was placed first for six vases of single Chrysanthemums; second, Mr. Johnson. For a bowl of Chrysanthemums the Rev. R. H. Allington was first. The fruit classes resulted in numerous entries and competition was very keen. The principal prize-winners were Sir A. Evans, Mr. A. S. B. Tull, Mr. E. K. Ellis, Dr. Neil, Mr. Town, Mr. Johnson, Mr. Whiteley, and Mr. Moss. Grapes were shown better than usual. Sir Arthur Evans had the best two bunches of Muscats; second, Mr. A. S. B. Tull. Mr. Johnson won first prize for two model bunches of Alicante.

The collections of vegetables were good and very neatly staged. Mr. A. Wadham was a prominent prize-winner in these classes, with splendid produce. The whole centre of one room was occupied by table decorations, the competition being very keen. For a decorated dessert table, Mr. W. T. Mattock won the first prize.

Silver Medals were awarded to Dr. Waters, Mr. John Mattock, Mr. G. Prince, Mr. Arthur Rowles and Mr. W. A. Adams.

NATIONAL DAHLIA.

Annual Meeting.

The Annual Meeting of the National Dahlia Society was held on Tuesday, the 18th inst., in the Lecture Room of the Royal Horticultural Hall, Vincent Square, Westminster. There was a small attendance of about twenty, including Messrs. J. B. Riding, J. Cheal, J. Green, H. Stredwick, J. S. Brunton, R. H. Holton, G. F. Tinley, and N. D. Stephens.

Mr. Joseph Cheal occupied the chair, and in opening the proceedings referred to the serious loss the Society had sustained in Mr. Stephens being compelled to relinquish the secretaryship owing to ill-health. He stated that Mr. Holton was appointed by the Committee to carry on the duties of Secretary until the annual meeting, and he asked Mr. Holton to read the annual report.

Extracts from the Report.

The extraordinarily wet season has not been altogether unfavourable to Dahlias, and they have had a long flowering season, extending from June to the end of October. The annual exhibition was one of the best ever seen, the quality of the exhibits being good, and the classes much more varied than formerly, the artistic side being well represented by bouquets, table decorations, vases, and baskets, thus emphasising more than ever the decorative value of the Dahlia as a cut flower. Greatly added interest and publicity was given to the show this year by the presence of Her Royal Highness Princess Louise, Duchess of Argyle, who kindly performed the opening ceremony, and expressed her pleasure at the fine display, and graciously consented to become a Patroness of the Society. Much of the success of the present season has been obtained by the ability and energy devoted to the Society by Mr. Stephens, the ex-Hon. Secretary, and the Committee greatly regret that, owing to a serious breakdown in health, he has been compelled to resign the secretaryship. A Conference on Dahlias was held at the Horticultural Hall, when Mr. Cobb, of Reading College, and Mr. Hay, of Hyde Park, each read papers, which were followed by interesting discussions. A *resumé* of the Conference will be published in the forthcoming schedule. The trial of new varieties at Wisley has again proved most useful in testing the value of varieties for garden display. Many new varieties have been raised and shown during the season, and a number of the most promising have been selected by the Joint Committee for further trial. The prospects of the future success of the Society are brighter than ever before. The Committee appeals to the subscribers for their continued interest and support.

The balance sheet was submitted by the Treasurer, Mr. John Green, who stated that it was the best put in his hands during the fourteen years he had occupied the Treasurership. He stated that it was a remarkable coincidence that the receipts from the show, £14 12s. 6d. were exactly the same as last year. The balance sheet showed there was a surplus of income over expenditure amounting to £54 0s. 8d. The principal sources of income were subscriptions, £104 16s. 8d.: Propaganda fund, £31 10s.; advertisements, £20 2s.; special prizes, £15 10s.; and money taken at the show, £14 12s. 6d. On the debit side the chief items were prizes, £57 9s. 6d., and printing £64 13s. 5d. The adoption of the report and balance sheet, seconded by Mr. Brunton, was carried unanimously.

Mr. Tinley referred to the valuable work done during the short time Mr. Stephens had occupied the secretaryship, and expressed the regret of all present that he was unable to continue owing to ill-health. Mr. Cheal asked Mr. Nigel Stephens, who was present, to convey to his father the great regret of all in his illness with hopes for a speedy recovery. Mr. Cheal moved that one of the Gold Dean Memorial Medals be presented to Mr. Stephens, and this was seconded by Mr. J. Green and carried unanimously. Mr. Nigel Stephens thanked the chairman and Mr. Tinley for their remarks, and stated that his father's health had improved. It was, he said, his father's greatest regret that he had not been able to carry his work through.

Mr. J. B. Riding, a former secretary, pointed to the great increase in the printing bill, and stated that half the printing was useless. It was pointed out by members that it was in consequence of the propaganda by literature that the Society had done so remarkably well during the past year, and largely in consequence of Mr. Stephens' efforts the membership in 1924 had more than doubled.

The meeting then proceeded to the election of officers. Mr. Reginald Cory was re-elected President, and the vice-presidents were re-elected *en bloc*. The Committee was re-elected, with the addition of Mr. Findlay and Mr. John Green, to fill vacancies; Mr. Joseph Cheal was appointed Chairman of Committee; Mr. J. Emberson was re-appointed Hon. Show Superintendent.

Mr. Green stated that he was unable to continue to act as treasurer following the instructions of his medical adviser, and Mr. D. B. Crane was re-elected in his place. The election of a secretary, caused by the resignation of Mr. Stephens, resulted in Mr. W. J. Chittenden, a nominee of the Committee, being appointed, on the proposition of Mr. Cheal, seconded by Mr. Green. Mr. Cheal voiced the thanks of the Society to Mr. Holton for what he had done, and he proposed that an honorarium of £2 2s. be given Mr. Holton, and this being seconded by Mr. Stredwick it was carried with applause, accompanied by the thanks of the meeting. Mr. Brousson was appointed auditor.

The resignation of Mr. Green as treasurer was received with great regret, and Mr. Holton proposed a hearty vote of thanks to him for his fourteen years' valuable services. Mr. Tinley supported the proposition, and proposed that the Gold Dean Memorial Medal be awarded to Mr. Green. This was seconded by Mr. Brunton and carried unanimously. In returning thanks, Mr. Green stated that he had occupied the treasurership for fourteen years, and for fourteen years previous to that he had been connected with the Dahlia Society. He was pleased to know that he would still be associated with them as a member of the Committee. He would treasure the Dean Memorial Medal the more because he had much to do with the institution of that special award.

A vote of thanks was proposed to Mr. Nigel Stephens by the chairman for the valuable assistance he had given his father during the past year in the secretarial duties.

BIRMINGHAM CHRYSANTHEMUM.

November 18, 19, 20.—This well-known Midland Floricultural Society's Sixtieth Exhibition, held in Bingley Hall, Birmingham, was well supported by exhibitors and the public, and although it was not the largest or best show seen at Birmingham, the quality of the exhibits generally was of great excellence, and the Society is gradually winning its way back to its pre-war position.

Owing to the very trying summer and autumn experienced in the Midlands, Chrysanthemum growers are to be congratulated upon the result of their efforts. Apples were excellent both in size and colour, and so too, were Pears, but vegetables were less numerous than usual. Honorary exhibits added pleasing variety to the show, which was a great success. The schedule of prizes—a fairly comprehensive one—included classes for groups, pot plants, and vases of Chrysanthemums, and tables decorated with the Queen of Autumn flowers.

In addition to the above, classes were provided for Begonias, Primulas, Cyclamens, Salvias, Palms, Ferns, fruits, and vegetables, and about £300 were offered in prizes.

GROUPS.

The first prize of £10, offered for a group of Chrysanthemums arranged as grown, occupying a space of fifteen feet by six feet, was won by J. A. Kenrick, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer), whose meritorious exhibit consisted principally of yellow, pink, and white Japanese varieties, together with a good selection of decorative and single-flowered varieties mingled with Eulalia japonica variegata, Ferns, Palms, and graceful Bamboos; second, B. Goodman, Esq., Augustus Road, Edgbaston (gr. Mr. A. Edney), or a splendid group in which the various types—especially Japanese—were well represented.

PLANTS.

Three classes were reserved for these but competition was rather disappointing, although the few exhibits placed before the judges were of excellent quality.

The best six decorative Chrysanthemums (singles excluded) came from Colonel A. J. Parkes, Edgbaston (gr. Mr. L. C. Hockins), who showed remarkably good plants of Market Red, Nellie Pockett, and William Turner; second, C. F. Farley, Esq., Barford (gr. Mr. L. W. Bass) whose specimens of December Gold were splendidly flowered.

In a class for six single-flowered Chrysanthemums, Colonel A. J. Parkes was the only exhibitor. His plants of Robert Milner, Florrie King, Mensa, and Mrs. Loo Thompson were surprisingly good. The same exhibitor also sent the winning set of three decorative Chrysanthemums; second, J. W. Moore, Esq., Kings Norton, (gr. Mr. F. Moorman).

CUT BLOOMS.

A class for single-flowered Chrysanthemums, arranged on separate tables ten feet by four feet, brought only two entries. Cut foliage and foliage plants were admissible and exhibitors were at liberty to introduce any kind of vase.

Mr. H. Woolman, Shirley, Birmingham, was an easy first with large, fresh, well set-up flowers in bold masses. A few of the most conspicuous varieties were Mrs. A. B. Hudd (rich yellow), Miss Joyce Moore (large crimson), Fantasy (apricot), Mrs. W. J. Godfrey (extra good), Mrs. Harry Woolman (new, large orange-yellow), Bridgewater Purple, Dorrie, and Mrs. W. Smith; second, Mr. A. H. Hickman, Cookley, Kidderminster.

In the important class for thirty-six Japanese blooms in not fewer than eighteen varieties, and not more than three blooms of any one variety, staged on tables of twelve feet by four feet, there was only one exhibitor—The Dowager Lady Annaly, Northampton (gr. Mr. D. Cameron), who contributed a grand lot of flowers and was deservedly awarded the first prize of £15 and a Silver Challenge Shield. Her best specimens were Mrs. J. Gibson, General Petain, Majestic, Mrs. Gilbert Drabble, Queen Mary, W. Rigby, Mrs. George Monro, Shirley Golden, and Norman Chittenden.

For nine vases of Japanese blooms in three varieties, one bloom in a vase, W. H. Allen, Esq., Bedford (gr. Mr. H. Blakeway), was placed first with wonderfully good examples of W. Rigby, Queen Mary, and Princess Mary; second, The Dowager Lady Annaly, who had grand blooms of His Majesty, Norman Chittenden, and Majestic; third, J. H. Wheatley, Esq., Berkswell Hall, Coventry (gr. Mr. W. H. Westbury), whose best variety was William Turner.

The next class was for twelve Japanese blooms in not fewer than nine distinct varieties, one bloom in a vase. Plants or foliage could be used for effect on a table space of six feet by three feet. The only exhibitor was Mr. W. C. Robinson, Coventry, whose flowers of Golden Champion, Sir E. Letchworth, Mrs. F. J. Fleming, Queen Mary, Mrs. C. Fox, Mrs. Gilbert Drabble, and Majestic were of outstanding merit.

The best three vases of a pink-coloured Japanese variety came from W. H. Allen, Esq., who showed very refined, broad-petalled specimens of Mr. Algernon Davis; second, J. Green, Esq., Cradley, with Mrs. B. Carpenter; third, J. H. Wheatley, Esq.

The winning three vases of a crimson-coloured Japanese variety, Mrs. George Monro, were shown by Mr. W. C. Robinson; second, W. H. Allen, Esq., with Thomas Lunt; third, H. F. Keep, Psq., Edgbaston (gr. Mr. T. W. Davies), with Mrs. George Monro.

There were five capital entries in the class for three vases of a white Japanese variety. The first prize was awarded to W. H. Allen, Esq., for very large blooms of Mrs. G. Drabble with yellow shaded centres; second, J. H. Wheatley, Esq., for handsome specimens of pure white flowers of William Turner, which many exhibitors and visitors considered to be superior to the first prize set; third, Major Harcourt Webb, Bewdley (gr. Mr. W. Gaiger) with Queen Mary; fourth, H. F. Keep, Esq. (gr. Mr. T. W. Davies), with William Turner.

W. H. Allen, Esq., beat five other contestants in the class for three vases of a yellow-flowered Japanese variety with bold, richly-coloured blooms of Mrs. R. C. Pulling. Flowers of the same variety gained second and third prizes for Captain C. F. Farley, Barford, and J. E. Wheatley, Esq., respectively. The leading exhibit of three vases of any colour other than those in the above-named class came from H. T. Keep, Esq., who staged superb examples of Majestic; second, J. H. Wheatley, Esq., also with Majestic; third, W. H. Allen, Esq., with Dawn of Day; fourth, Captain C. F. Farley.

In a class for six varieties of single-flowered Chrysanthemums, six blooms of each variety, there were seven splendid exhibits; first, Mr. H. Woolman, with handsome flowers of A. B. Hudd, Bronze Molly, Mrs. J. Palmer, Mrs. Harry Woolman, Sandown Radiance, and Edith Dimond; second, Hugh Andrews, Esq., Toddington Manor, Winchcombe (gr. Mr. J. R. Tooley); third, Messrs. Hewitt and Co., Solihull. The best half-dozen varieties of decorative Chrysanthemums, six blooms of each variety, came from Messrs. Hewitt and Co., new exhibitors in the competitive classes. They had very good flowers of Jean Pattison, Romance, Dazzler, Rayonnante, Guy Hamilton, and M. J. Valet; second, Mr. A. H. Hickman, whose best flowers were H. W. Thorpe, Cranfordia and Rayonnante; third, Mr. E. J. Keeling, Small Heath, Birmingham.

The best vase of nine blooms of a single-flowered Chrysanthemum came from J. A. Kenrick, Esq., whose specimens of Susan, relieved with Asparagus and Eulalia foliage, were much admired; second, Mr. A. H. Hickman, with Edith Dimond; third, Sir George H. Kenrick, also with Edith Dimond.

LOCAL CLASSES (OPEN).

There was competition in each of the half-dozen classes reserved for local growers, but we should like to see a great increase in the number of competitors. H. F. Keep, Esq. (gr. Mr. T. W. Davies), won first prizes for (1) twelve Japanese varieties; (his best flowers were Edith Cavell, Princess Mary, Prince Henry, Majestic, and Mrs. R. C. Pulling); (2) two varieties of Japanese Chrysanthemums, three blooms of each, with monster flowers of Mrs. R. C. Pulling and Mrs. Algernon Davis; (3) twelve varieties of Incurved Chrysanthemums, three blooms of each, with exquisite flowers of Mrs. George Denyer, Marjorie Shields, Triomphe de Bruin, G. F. Evans, and Fred Palmer; (4) twelve varieties of Japanese Chrysanthemums, and in another, (5) for two Japanese varieties, three blooms of each, with delightful specimens of W. Rigby and Mrs. M. Sargeant.

F. Bayliss, Esq., Walsall (gr. Mr. C. J. White), excelled in a class for two Incurved varieties, three blooms of each, with magnificent specimens of Mrs. Percy Wiseman and Buttercup. Other prize winners in these classes were Messrs. J. W. Moore, J. Green, W. Hall, and W. J. Wakefield.

AMATEUR CLASSES.

There was excellent competition in these classes, and the undermentioned exhibitors secured first prizes, viz., Messrs. H. Hall, A. Grove, Hugh Andrews and J. Allen.

TABLE DECORATIONS.

Although there were fewer entries in the two Dinner Table classes than a year ago, the fourteen tables, each six feet by four feet, made a good show. In the first class, Chrysanthemums only could be used, but any flowers were admissible in the second one. The leading prize in the first-named class was won by Sir George H. Kenrick (gr. Mr. J. V. Macdonald), who employed single yellow and orange-coloured flowers, relieved with foliage of Nandina domestica, Ferns and Selaginella sprays. Second, Mrs. E. K. Lupton, Sparkbrook, whose colour scheme consisted of yellow and terra-cotta coloured flowers. Third, Mr. A. W. Shipton, Edgbaston. In the second class in which any flowers were admissible, Mr. E. Collett, Handsworth, took the lead with Chrysanthemums, Oncidiums, Cypripediums and sprays of Selaginella arranged in low vases; second, Mr A. W. Shipton; third, Sir George H. Kenrick.

SPECIAL PRIZES.

Mr. H. Woolman offered prizes for nine Japanese Chrysanthemums in not fewer than six varieties. The first prize was won by Mr. H. Hall, Halesowen, who showed choice blooms of Queen Mary, Mrs. R. C. Pulling, Majestic, Victory and Mrs. Algernon Davis; second, Mr. R. J. Edwards, Burcot. The same donor also offered prizes for a dozen Japanese blooms in four varieties, three blooms of each. The first and second prizes were won by Mr. W. C. Robinson, Coventry, and Major Harcourt Webb Bewdley (gr. Mr. W. Gaiger), respectively.

The special prize of a guinea offered by Messrs. W. Wells and Co. for the best Japanese bloom in the show (trade excluded) was won by W. H. Allen, Esq., Bedford (gr. Mr. H. Blakeway) with W. Rigby. Mr. H. N. Ellison's prizes for six distinct Ferns were won by: first, J. A. Kenrick, Esq.; second, Mr. E. J. Keeling, Small Heath; third, The Rt. Hon. Neville Chamberlain, M.P., Edgbaston.

MISCELLANEOUS PLANTS.

Colonel A. J. Parkes (gr. Mr. L. C. Hockins) won first prize for twelve huge profusely flowered plants of Begonia Gloire de Lorraine; second, The Rt. Hon. Neville Chamberlain, M.P. (gr. Mr. P. Catt), with smaller but excellently flowered bushy specimens; third, B. Goodman, Esq. (gr. Mr. A. Edney). In a class for six Begonia Gloire de Lorraine, Colonel Parkes again took the lead with grand plants; second, B. Goodman, Esq.; third, J. A. Kenrick, Esq The last-named exhibitor excelled in classes for (a) 12 Cyclamen with small beautifully flowered plants; (b) six Palms, (c) one Tree Fern; (d) six pots of scarlet Salvias; (e) six Primula sinensis (f) six Primula obconica and (g) one Palm.

J. W. Moore, Esq., Kings Norton (gr. Mr. F. Moorman), had the best half-dozen single-flowered zonal Pelargoniums, and Captain C. F. Farley contributed the winning exhibit of six Cyclamen.

FRUIT.

The principal fruit class was for a collection of British-grown fruit arranged on a table of fourteen feet by four feet, and although there was only one exhibit it represented remarkably good culture. Peasgood's Nonesuch, Bismarck, Beaumann's Red Winter Reinette, The Houblon, Rival, King of the Pippins, The Queen, and Cox's Orange Pippin Apples; Beurré Hardy, Beurré Alexandre Lucas, Brown Beurré, and Doyenné du Comice Pears; white and black Grapes, Peaches, Plums, Walnuts, Filberts, Quinces, and Medlars.

A large number of classes for single dishes af Apples were provided, and the under-mentioned exhibitors were awarded first prizes:—

Hugh Andrews, Esq. (gr. Mr. J. R. Tooley), for Bismarck, very big and well coloured; Blenheim Pippin, Bramley's Seedling, heavy fruit; Cox's Pomona, big and well coloured; Charles Ross, excellent; Gascoygne's Scarlet, King of the Pippins, Lane's Prince Albert, extra big; Lord Derby, The Queen, and the Rev. W. Wilks. Mr. C. W. Powell, Warham, Hereford, for Allington Pippin, medium size but splendidly coloured; Annie Elizabeth, very large; Cox's Orange Pippin, small samples; The Houblon and splendid Newton Wonder. T. C. V. Garlick, Esq., Kidderminster, for Emperor Alexander; and the Studley Horticultural College, Warwickshire, for very handsome Peasgood's Nonesuch.

Pears.

Mr. C. W. Powell, for Durondeau, Marie Louise, Pitmaston Duchess, magnificent fruits; and Conference. Hugh Andrews, Esq., for Catillac and Doyenné du Comice. T. C. V. Garlick, Esq., for beautifully coloured Beurré Clairgeau. Major Harcourt Webb, Bewdley (gr. Mr. W. Gaiger), for very large specimens of Charles Ernest.

Grapes and Apples.

The last-named exhibitor won first prize in a class for three bunches of black Grapes, with one large berried, well finished bunch of Gros Colmar, and two of Alicante. Second, H. R. Padmore, Esq., Edgbaston (gr. Mr. C. Batchelor); third, Hugh Andrews, Esq., who had the best pair of bunches of white Muscats; second, J. A. Kendrick, Esq. (gr. Mr. A. Cryer). The only exhibitor of two bunches of black Grapes grown within five miles of Birmingham was H. R. Padmore, Esq., and he was deservedly awarded first prize. Hugh Andrews, Esq., beat five contestants in a class for three dishes of cooking Apples, with splendid fruits of Lord Derby, Bismarck, and Bramley's Seedling; second, Mr. C. W. Powell, who had grand dishes of Bramley's Seedling, Annie Elizabeth, and Peasgood's Nonesuch; third, Mr. T. Parry, Droitwich. The best three dishes of dessert Apples also came from Hugh Andrews, Esq., who showed highly coloured Rival, Wealthy, and Charles Ross; second, Mr. C. W. Powell; third, Major Harcourt Webb. The leading dishes of locally grown cooking Apples came from Mr. E. J. Keeling, who was followed closely by Mr. S. G. Compton, of Bournville.

Vegetables (open).

Five entries were made in the class for six varieties of Potatos. First, Mr. E. Winchester, Rubery, with grand tubers of Warwick Castle, British Queen, and King George; second, Major Harcourt Webb (gr. Mr. W. Gaiger), whose exhibit included a remarkably good dish of Arran Comrade; third, Mr. W. Perks, Lye.

In the seventeen classes provided for single dishes of vegetables, the following exhibitors were the most successful prize-takers:—Major Harcourt Webb, won first prizes for (a) nine dishes of Onions; (b) six round Beet; (c) six Long Beet; (d) six Carrots: (e) six Kidney Potatos, and (f) six Parsnips. Mr. F. Anderson, Shirley, had the best lot of Cauliflowers, Mr. E. Winchester led with Leeks and Round Potatos. Mr. W. Wheldon, Coventry, was successful with green Cabbages, and E. J. Keeling with Red Pickling Cabbages; Mr. W. Maycock, Kings Heath, with Celery, Savoy, and Shallots, and Messrs. Henry Masters and Son, Evesham, with Brussels Sprouts.

In the twelve classes open only to allotment holders, Mr. S. G. Fathers, Kings Heath, was very successful. He won first prize in strong competition for six distinct kinds of vegetables, with excellent Carrots, Leeks, Onions, and Cauliflowers. His other successes were for (1) Long Beet; (2) Carrots; (3) Leeks; (4) Shallots, and (5) Savoys. Mr. Wheldon also secured the Parton Challenge Cup, offered to the exhibitor gaining the highest number of points in the allotment classes. Other winners in these classes were Messrs. A. J. Carter, C. Parker, W. E. Hickman, A. Haynes, and G. H. Darben.

Messrs. Sutton and Sons offered prizes for nine kinds of vegetables. First, Mr. E. Winchester who showed uncommonly good Leeks, Carrots, Parsnips, Brussels Sprouts, Cauliflowers and Onions. Second, Hugh Andrews, Esq. (gr. Mr. J. R. Tooley). Mr. E. Winchester also secured five of the other six prizes offered in classes for Carrots, Onions, Tomatos, Beet and Potatos.

Messrs. Webb and Sons prizes were offered for six kinds of vegetables. First, Mr. W. Wheldon, Coventry, with particularly good Leeks, Carrots, and huge Onions. Second, Mr. E. Winchester, whose best dishes were Celery and Brussels Sprouts. Third, Mr. W. Perks, Lye. Others of Messrs. Webb and Sons first prize winners were Mr. E. Winchester for Carrots, Beet, and Potatos; Mr. A. H. Hickman, for Parsnips and Cauliflowers, and Mr. W. Wheldon for Onions.

Mr. S. G. Compton, Bournville, was the only exhibitor in the above firm's class for four kinds of vegetables open to bona-fide allotment holders within a radius of seven miles from Birmingham. This same exhibitor also won Messrs. Dickson and Robinson's first prize for nine Onions.

Honorary Exhibits.

Gold Medals were awarded to Messrs. John Waterer, Sons, and Crisp, Bagshot, Surrey, for hardy shrubs; Messrs. Hewitt and Co., Solihull, for hardy shrubs and Chrysanthemums; Mr. H. Woolman, Shirley, for Chrysanthemums; Messrs. Bakers, Wolverhampton, tor hardy shrubs and Chrysanthemums; Mr. C. W. Powell, Warham, for hardy fruit; Studley Horticultural College, Warwickshire, for Chrysanthemums; Messrs. Gunn and Sons, Olton, for fruit trees and gathered fruit; Messrs. Toogood and Sons, Southampton, for vegetables and Chrysanthemums; Mr. Grosvenor Workman, Birmingham, for sundries.

Silver-Gilt Medals were awarded to Messrs. W. J. Godfrey and Son, Exmouth, for Chrysanthemums; The Forest and Orchard Nurseries, Falfield, Gloucestershire, for Apples, Pears, and hardy shrubs; Messrs. Kent and Brydon, Darlington, for Apples and Potatos; Miss S. S. Thompson, Handsworth, for Cacti; Mr. H. N. Ellison, West Bromwich, for fruit and vegetables; Messrs. Hopwood and Son, Cheltenham, for Apples and Pears interspersed with Chrysanthemums; Mr. E. J. Parsons, Worcester, for Apples and Pears.

Silver Medals were awarded to Colonel A. J. Parkes, Edgbaston (gr. Mr. L. C. Hockins), for Chrysanthemums; Messrs. Legg Brothers, King's Heath, for Chrysanthemums, Ericas, and Ferns; Messrs. J. and W. Green, Cradley, Staffs., for Chrysanthemums; Messrs. Sheppards, Hollywood, for Chrysanthemums and hardy shrubs; The Bournville Village Nursery, Birmingham, for hardy fruit, Chrysanthemums, and berry-bearing shrubs; Mr. A. Bayliss, Birmingham, for rustic work.

A Bronze Medal went to Messrs. Reamsbottom and Co., West Drayton, for Anemones.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

The seventy-ninth annual Festival Dinner of the Gardeners' Royal Benevolent Institution held on Tuesday last, was the most successful of the series and resulted in a record sum being raised on behalf of the Institution.. Two factors contributed to this splendid success, for His Royal Highness, the Prince of Wales, who is President of the Institution, occupied the chair and the dinner was held in the historical Guildhall of London, where so many important events have taken place in the past. The company numbered some four hundred and sixty and included many ladies. His Royal Highness was supported by Mr. Leonard Sutton, Chairman of the Committee, Sir George Holford and Lord Lambourne, and amongst those present we noticed Lord Treowen, Sir John Smith Young, Lord Aldenham, Mr. R. Cory, Mr. W. R. Dykes, Mr. Geo. Monro, Mr. J. Rochford, Mr. W. G. Lobjoit, Mr. Ed. Sherwood, Mr. G. W. E. Loder, Mr. W. Nutting, Mr. J. Hudson, Mr. D. Ingamells, Mr. J. Collingridge, Mr. F. H. Sutton, Mr. J. F. McLeod, Mr. A. Monro, Mr. F. Felton, Mr. W. A. Bilney, Mr. E. Beckett, Mr. P. R. Barr, Mr. G. R. Barr, Mr. N. F. Barnes, Mr. A. Bedford, Mr. Auton, Mr. E. Bunyard, Mr. G. N. Bunyard, Mr. B. Crisp, Mr. T. Cook, Mr. C. H. Curtis, Mr. A. Dawkins, Mr. E. Laxton, Mr. J. Linford, Mr. E. Willis, Mr. G. F. Tinley, Mr. W. Poupart, Mr. A. Metcalfe, Mr. A. Watkins, and Mr. P. C. M. Veitch.

As befitting a gardeners' dinner the tables were delightfully decorated with flowers and fruits; it was observed by those familiar with similar functions at the Guildhall for the past twenty years that they had never seen the building more beautifully decorated, and we congratulate Mr. H. Miles who carried out the scheme.

After the usual loyal toasts had been proposed and responded to, His Royal Highness gave the toast of the evening, "The Gardeners' Royal Benevolent Institution." He referred to the fact that he had been President of the Institution since 1919 and said that he was glad to take the chair on this occasion and assist a deserving charity, with which all persons interested in horticulture and gardening were so intimately connected. He referred to the objects of the Institution and stated that it was not only for the purpose of helping distressed gardeners, but also market gardeners, nurserymen and others connected with horticulture. Over two hundred and fifty gardeners or their widows were receiving annuities in different parts of the country and ninety were receiving temporary assistance from the Victorian Era and the Good Samaritan Funds. To maintain this work the sum of £5,000 per annum was necessary, yet the assured annual income of the Society was only £1,000. For this reason it was necessary to hold these annual festivals. A generous friend had offered to give £1,000 if £9,000 was raised at the dinner and £2,000 if £18,000 was forthcoming. He hoped that at least the first figure might be reached. The Institution suffered a great loss in the death of Sir Harry Veitch, who was Treasurer for forty-five years. His interest and practical help in this charity was well-known to all and he had provided a sum of £1,000 for this festival dinner fund. His Royal Highness considered that the charity was worthy of the support of all present, for it was one that made an especial appeal to Englishmen, who were great lovers of gordening, and horticulture in general had a strong hold on all of them. It was for that reason he asked those present to support the Institution. He said "to many of us who have the misfortune to spend our lives within the roar and smoke of the great City the thought of a garden is a very pleasing reminder that there are large areas in the country devoted to horticulture and that there is an agreeable smell in damp earth." "I ask you," he said, "to help those who supply a large proportion of our foodstuffs, and who make this England of ours a pleasant garden. Some of the more fortunate among us may spend our lives amidst beautiful flowers, in the production of which none can beat the English."

Mr. Leonard Sutton, Chairman of Committee, responded, and said that the occasion was unique in that the dinner was presided over by a Royal President. On behalf of the Executive and all connected with the Institution he thanked His Royal Highness for the encouraging words he had spoken, and for the great help he had given it in coming there that evening. He stated that the love of gardening was a national trait in the British character, and that there was evidences of it not only in this country, but wherever the Britisher went, whilst those who had not a garden in which to grow flowers bought the latter to put them on their tables. The Institution did not devote its attention solely to the relief of the growers of flowers, but nurserymen and those engaged in Covent Garden Market were eligible for the benefits of the Charity. In 1840 there was one pensioner on the fund, and now there are over two-hundred-and-fifty. This year the Committee desires to add a record number, and he appealed to those present to help them to do this. There were fifty applicants awaiting election, all of them strongly recommended, and it would be a splendid thing if they could all be elected, as the result of that evening's dinner. He asked those present to imagine what the extra few shillings would do for these fifty old people in the way of a little more nourishing food, another blanket, or a little more firing. The pensions, Mr. Sutton said, go to comfort these old men in the evening of their lives, but the provision of the pensions necessitated a reserve fund at the bank and thanks to those who have managed the Institution in the past, there was a reserve fund, but this must be increased. Mr. Sutton made reference to the loss of their late Treasurer, Sir Harry J. Veitch, stating that only those on the Committee could realise what the loss was to the Gardeners' Royal Benevolent Institution. He hoped that many there that evening would endeavour to follow in Sir Harry's footsteps and do what they could in aid of the charity. Mr. Sutton referred to the excellent work done by Mr. George Ingram, who had been Secretary for thirty-three years. They could all see what an enormous amount of work the dinner entailed, but that was only a side-issue, for throughout the year he devoted the whole of his energies to the Institution. Mr. Sutton stated that so long as Mr. Ingram remained Secretary the Committee felt the work would be carried on as successfully in the future as in the past, but every one interested should see that the old gardeners of England were not forgotten.

The toast of the Visitors was proposed by Sir John Smith Young, Renter Warden of the Worshipful Company of Gardeners, and Sir Woodman Burbidge, Bt., responded. The health of His Royal Highness was proposed by Lord Lambourne in his usual felicitous style and it was heartily received, those present standing and singing "God Bless the Prince of Wales."

The Secretary, Mr. George Ingram, stated that the grand total contributed amounted to £8,200, including a donation from His Royal Highness; 250 guineas from the Royal Horticultural Society; £138 from the Worshipful Company of Gardeners; 100 guineas from Lord Bearsted; £564 from Mr. Leonard Sutton, including 200 guineas from his firm; £850 from Mr. Geo. Monro, including £500 from Messrs. E. G., G., and B. Monro, and £400 from Mr. J. Collingridge.

His Royal Highness congratulated the Institution on the splendid success of the dinner and made an appeal to those present to raise the amount to £9,000 in order that the sum of £1,000 conditionally promised by an anonymous donor might be secured. Responses were soon forthcoming and sums of considerable amounts were announced, many of the subscribers doubling their donations. It was a fitting conclusion to such an auspicious occasion, for a scene of great animation prevailed as each fresh card was handed to the Secretary and scanned with pleasure by the Prince until at last the total amount required was reached.

We hope to give a list of the principal donations in a subsequent issue.

ANSWERS TO CORRESPONDENTS.

Book on Bulb Forcing: *W. A. B.* We know of no book dealing exclusively with the forcing of bulbs. Mr. J. J. Jacobs' new book on *Hardy Bulbs for Amateurs.* (price 5/6, post free from our Publishing Dept.), contains a chapter on "Hardy Bulbs in Pots and Bowls." The best varieties of Daffodils, Tulips, Hyacinths, etc., for this purpose are given, together with useful hints on cultural matters.

Creeping Buttercup on a Lawn: *B. M., Belgium.* Ranunculus repens is a very difficult weed to eradicate from lawns as it increases by means of the runners, so that close mowing for the destruction of the seeds, as is practised for most weeds, is of little avail in suppressing it. The most efficient method of getting rid of the weed is to mark the lawn into small areas and to hand-weed each area marked before proceeding to the next area. If this is not possible, dress the grass with nitrogenous fertilisers, which will cause the grass to grow so strongly as in time to crowd out the weeds. You may use lawn sand, as you suggest, but the application of either nitrate of soda or sulphate of ammonia in the spring would serve the same purpose. These fertilisers should be used at the rate of half-an-ounce to the square yard, and applied at intervals of a few weeks during the spring when the grass is growing actively.

Diseased Apples: *G. W.* The cause of the spots on the foliage and fruits sent for examination is due to infection by the scab fungus Venturia inaequalis. The trees should be sprayed with Bordeaux mixture first in the spring when the leaves are unfolding, and again immediately after the blossom has fallen.

Hard Tennis Courts: *H. J. M.* You will find particulars of the construction of a hard tennis court in *Gard. Chron.*, April 7, 1923. It is, of course, essential that the court should be perfectly level, and the levelling of the ground must be your first consideration. If necessary, drainage should be inserted, and a main drain through the centre of the court with side drains running obliquely into it would serve the purpose. If the ground is weedy it will be necessary to use some material such as gas-lime or creosote, but as the former is difficult to procure, creosote would probably be the best for your purpose. The site should be excavated to receive the hard material, and for a full tennis court you would require about fifty tons of clinkers as a base. The shale to be placed on the clinkers should be graded into three sizes, reserving the very fine dust for the surface. Brick rubble will be suitable for this purpose, say ten tons, and when each layer has been well rolled and consolidated, the surface should be dressed with a special red powder, such as is prepared by grinding red bricks or tiles. If you undertake the making of the court now the ground will be fairly moist, and the rolling and consolidating of the various layers of material will not be a matter of much difficulty, but if it is dry you will need to use plenty of water by means of a hose, and to water and roll until the whole is a compact, solid body.

Names of Fruits: *M. and C.* 1, King of the Pippins; 2, Lord Burghley. *A. H. W.* A, Orange Goff; B, Hormead Pearmain; C, Doyenné du Comice. *Chas.* 1, Passe Colmar; 2, Mario Louise; 3, Josephine de Malines; 4, Doyenné du Comice; 5, Winter Nelis. *J. A. S.* 1, Cox's Pomona; 2, Tower of Glamis; 3, Annie Elizabeth; 4, Hoary Morning; 5, Cornish Aromatic; 6, King's Acre Pippin.

Names of Plants: *Radio,* 2, Piptanthus nepalensis; 8, Stauntonia hexaphylla; the remainder were too scrappy to identify. *F. A. A.* Pyrus Aria (White Beam Tree). *Anxious.* Crataegus Carrierei. *R. H. L.* Cassia sp., but without flowers and foliage we cannot name the species. *M. C. D.* 1, Quercus coccinea, Waterer's variety; 2, Cupressus Lawsoniana Allumii; 3, Syringa sp., probably S. Emodi, but impossible to tell from fruits alone. *Myosotis.* We do not undertake to name florists flowers *M. B.* The foliage with glaucous colour on the under-surface is Magnolia acuminata. The bare twigs of the other specimens are insufficient for determining the names.

Clock Golf: *A. H.* There is no special measurement for the area of the circle employed for clock golf, as much depends on the space available on the lawn. A diameter of from ten yards to fifteen yards is sufficient for the game to be thoroughly enjoyed by adult players. The numbers from one to twelve are set equidistantly around the circumference of the circle and the putting hole, which may be made by embedding a sixty-sized flower pot in the turf may be set centrally, or if the game is to be rendered more skilful the hole may be placed in a position other than in the dead centre.

Plants for an Iron Soil: *W. T. H. S.* It is unusual to find a soil in this country so highly charged with iron to render it unsuitable for growing the usual run of hardy flowers and shrubs; if Hydrangeas do well in it we think you are safe to try almost anything. Hydrangeas, however, are usually recommended for such a soil, simply because the presence of iron encourages the formation of a blue pigment in the flowers.

Communications Received.—C. J. G.—J. S. C.—T. W. P.—H. P. V.—H. C. N.—Myosotis.—A. F.—H. A.—E. B.—W. X.

GARDENING APPOINTMENTS.

Mr. J. Elson, for sixteen months, Gardener at Llannerch Park, St. Asaph, N. Wales, and previously for ten years Foreman at Lowther Castle, Penrith, as Gardener to The Rt. Hon. Lord Rochdale, Lingholm Keswick. Cumberland. (Thanks for 2s. for R.G.O.F. Box.—Eds.)

Mr. L. F. Hurford, for the past two years under the Birmingham City Parks, and previously Gardener to J. H. Bean, Esq., Dudley, as Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

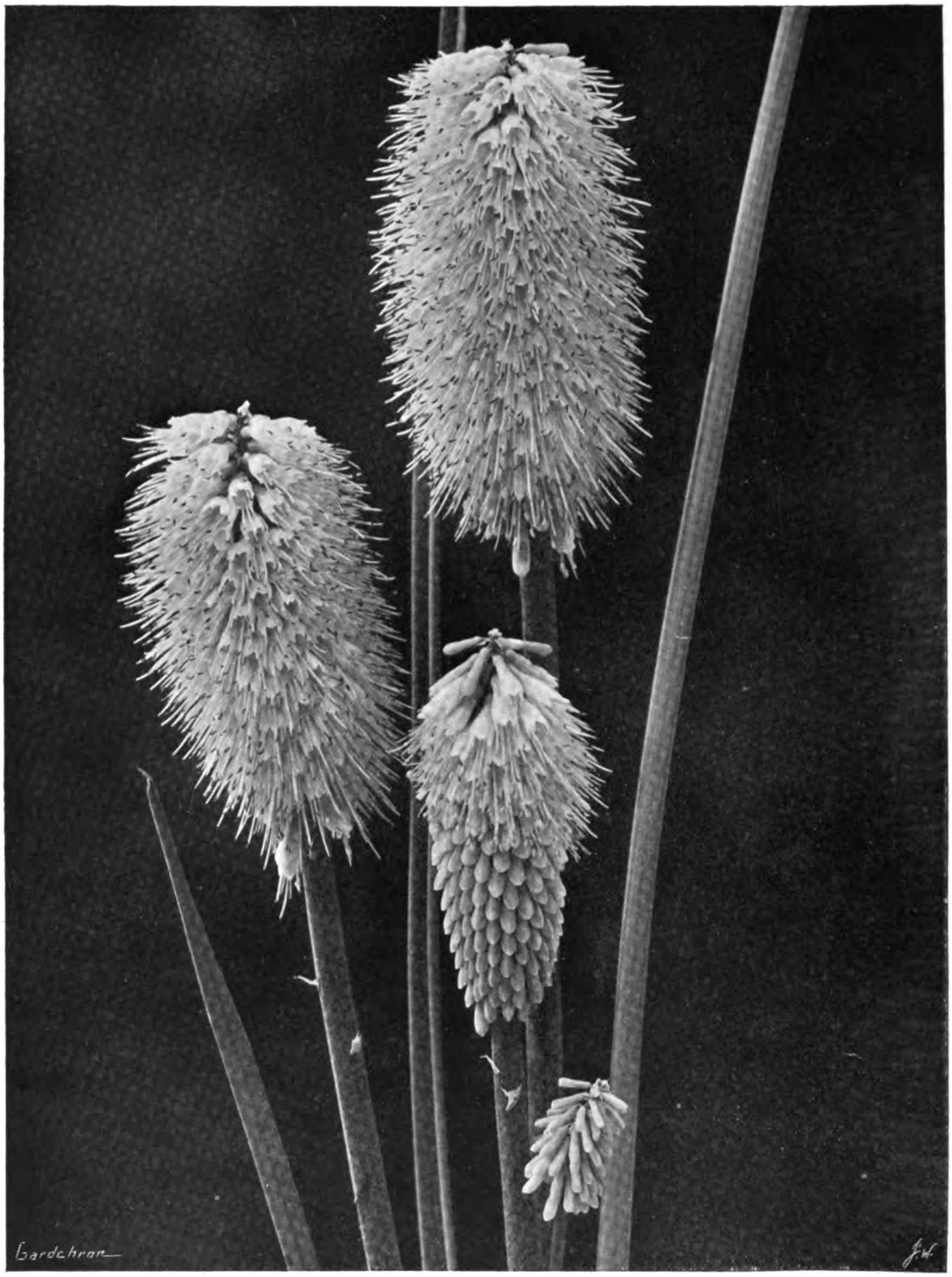
Mr. T. May, for the past ten years Gardener to F. Winterbotham, Esq., at Culls, Stroud, Gloucestershire, as Gardener to Sir Frank Nelson, M.P. for Stroud, at the same address.

Mr. R. Griffin, previously Gardener at The Priory, Bradford-on-Avon, as Gardener to A. Whitehead, Esq. of Linda Vista, Abergavenny.

Mr. E. T. Cox, for the past two years Gardener to A. B. Akroyd, Esq., Bartletts, Burnham, Buckinghamshire, as Gardener to Mrs. Penn Curzon, C.B.E., Watermouth Castle, Berrynarbor, N. Devon. (Thanks for 2s. for R.G.O.F. Box.—Eds.)

Mr. H. Ranson, for five years Gardener to A. R. Faulkner, Esq., Fairlawn, Parkside, Wimbledon Common, S.W. 19, and previously for ten years Gardener to Sir William Joynson-Hicks, Holmbury, near Dorking, Surrey, as Gardener to W. J. Firth, Esq., The Wilderness, East Molesey, Surrey. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.)

Mr. A. Howell, for the past nine-and-a-half years Gardener to W. H. Bishop, Esq., Farly Court, Reading, as Gardener to J. Godman, Esq., Park Hatch, near Godalming.


Gardchron
J.W.

KNIPHOFIA COMOSA.

THE
Gardeners' Chronicle
No. 1980—SATURDAY, DECEMBER 6, 1924

CONTENTS.

Agricultural Wages Board 384
Alpine garden—
  Choice Arenarias ... 391
  Hypericum reptans ... 391
  Viola bosniaca ... 391
Begonias at Kew, winter-flowering ... 384
Belle Vue Park, Berlin, the future of 384
Books, notices of—
  A Romance of the Rostrum 392
  Journal of the Royal Society of Arts ... 383
Chrysanthemums at Southend 392
Cultural memoranda—
  Forcing winter flowers 385
Cytisus Adami, the fruiting of 384
Epipogon Epipogium ... 394
"Gardeners' Chronicle" seventy-five years ago 385
Godfrey, Mr. W. J. ... 384
Gooseberry, a new species of 383
Hardy flower border—
  Herbaceous Paeonies 387
Hardy fruit garden—
  Late Plums 392
National Chrysanthemum Society's show in 1925 383
Oaks as ornamental trees 383
Orchid notes and gleanings—
  Odontoglossum novelties 389
Pine chermes in the Royal Gardens, Kew 388
Rose garden—
  Rose Gorgeous ... 385
Societies—
  Ayrshire Chrysanthemum... 397
  British Florists' Federation 396
  Derbyshire Horticultural 397
  Gardeners' Royal Benevolent Institution 398
  Glasgow and West of Scotland Horticultural 396
  Hull Chrysanthemum 394
  Manchester and North of England Orchid 396
  National Chrysanthemum 397
  Orchid Club 396
  Reading and District Gardeners' 397
  Royal Horticultural 395
  Royal Horticultural of Aberdeen 398
Sugar Beet cultivation, British 384
Trees and shrubs—
  Crataegus Carrierei ... 391
  Eccremocarpus scaber 391
  Lonicera japonica var. Halliana 391
Vegetable garden—
  Okra or Gombo ... 393
  Onions for autumn sowing 393
Week's work, the ... 386
Willows, the 390

ILLUSTRATIONS.

Chermes pini on Picea orientalis 388, 389
Godfrey, Mr. W. J., portrait of 384
Paeony Madame Emile Lemoine 387
Rose Gorgeous at Kew, a bed of 385
Salix Caprea × S. lanata, catkins of 391
Salix japonica var. Lavallei, catkins of 390

SUPPLEMENTARY PLATE.

Kniphofia comosa.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 40·5

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden London, Wednesday December 3, 10 a.m.: Bar. 29·8 temp. 48° Weather, overcast.

A New Species of Gooseberry.

It is rare nowadays that a new species of a well-known genus of plants is discovered as a conspicuous denizen of a settled country, yet Mr. Frederick V. Coville reports* the finding of a new spiny-fruited species of Gooseberry, which he has named Grossularia (Ribes) echinella, in the neighbourhood of Lake Miccosukee, Florida. The most conspicuous characteristic of the new species is the occurrence on the fruit of numerous vivid green, glandular prickles each about one-fifth of an inch in length, which give to the berries the appearance of the fruits of Xanthium globosum. The new species differs in numerous particulars from its nearest relative, G. curvata. It is, so far as is known, of very restricted range, but in the district where it occurs it constitutes the dominant shrub of the forest belt and runs out into the uplands along the slopes of small streams which empty into Lake Miccosukee. G. echinella is evidently related with three other American species, G. curvata of the South-east United States; G. missouriensis of the middle and upper Mississippi Valley region; and G. nivea, of the plains of eastern Washington, Oregon and other States. From all of them, however, G. echinella differs in its possession of a spiny fruit. Sessile glands occur in G. curvata and, as Mr. Coville points out, if these were elevated on stalks they would look not unlike the glandular prickles of G. echinella. The geographical distribution of the new species is of particular interest. Growing in Florida at an elevation of no more than two hundred feet above sea level, in the region of the cultivation of the Satsuma Orange, it is almost a sub-tropical representative of a north-temperate genus. In the course of his interesting account of this discovery, Mr. Coville suggests that the new species may perhaps become of economic importance. Gooseberry cultivation—as well as the cultivation of Currants—has had a severe set back in the northern United States owing to the harbourage by this crop of one stage of the Blister-rust fungus which threatens the destruction of the White Pine forests. A somewhat ruthless campaign of destruction of the Gooseberry has been embarked upon by forestry experts in the northern States and already more than a million dollars have been expended on the eradication of Gooseberries and Currants in the White Pine region in the hope that the ravages of Blister-rust may be stayed. Driven from the north, Gooseberry cultivation may yet find a place further south if only Grossularia echinella proves capable of hybridising with cultivated Gooseberries and giving rise to palatable berries. There it would be secure, at least for a time, from the severe attentions of United States foresters, for in those southern districts no White Pines grow. Mr. Coville and his colleagues are to be congratulated on this interesting discovery and on the interesting description which he has given of the new species.

Our Supplementary Plate.—All the Kniphofias in cultivation are useful for providing rich colours in our gardens, and of the many species grown, K. comosa, which forms the subject of the supplement plate presented with this issue, is one of the best of the large-flowered species. In *The Gardeners' Chronicle* (Vol. LVI., p. 410), Mr. N. E. Brown contributed an admirable treatise on this genus, and with reference to K. comosa he pointed out that the original K. comosa of Kew was described by Baker as K. Leichtlinii var. distachya, and suggested that it might be a hybrid between K. comosa and K. Leichtlinii. With the introduction of so many forms of both these species and others, and to which some nurserymen are giving fanciful names, it is doubtful whether the value of the K. comosa of cultivation is not being overshadowed. Both K. comosa and K. Leichtlinii share the same peculiarity in opening their flowers in the reverse of the usual order when the stem produces only one spike, but when lateral spikes are borne on the stem their flowers open from below upwards, as our illustration well depicts.

Journal of the Royal Society of Arts.—Commencing with the first issue of Vol. LXIII (dated November 21), this weekly publication of the Royal Society of Arts appears in a new dress, for instead of the familiar, dark grey cover the latter is grey-blue. The use of art paper on which the text is printed gives the publication a much more imposing appearance, and the type, which is larger than in the older issues, is printed across the page instead of in two narrow columns, as heretofore. The result is a much superior publication, and the Society is to be congratulated on the change. The reproduction of a miniature of William Shipley, the founder of the Society is most appropriate in this new and improved series of the *Journal*. The miniature was formerly in the possession of the Society, to whom it was presented by the artist, and it is not known how it passed out of the Society's possession. It was at one time the property of Mrs. Peale, who gave the miniature to Miss Monckton, and on the death of this lady her brother and executor, Mr. Herbert Monckton, generously handed it over to the Society. Not much is known of William Shipley, who was a native of London and for long an inhabitant of Maidstone, where he opened a school for the teaching of drawing. In 1754 he, conjointly with Lord Romney and several other gentlemen, originated the Society of Arts, and for some time acted as its Secretary.

National Chrysanthemum Society Show in 1925.—The next annual exhibition of the National Chrysanthemum Society will be held on Thursday and Friday, November 5 and 6, 1925, in the Royal Horticultural Hall, Vincent Square, Westminster.

Oaks as Ornamental Trees.—In a recent *Bulletin** describing the Oaks in the Arnold Arboretum, the author draws attention to, and deplores the fact that Oaks are comparatively rarely planted in the United States, either in parks or streets or as ornamental trees. The same is in no small measure true of this country. Since the days when Collingwood, from patriotic motives, filled his pockets with Acorns and scattered the seeds in the course of his walks, the Oak, no longer needed for furnishing timber for ships of war, has suffered from ill-deserved neglect. As the *Bulletin* points out, although there are relatively few species of Quercus which will survive the hard winters of the Eastern States, there are, nevertheless, among them trees of great beauty and well worth extensive planting. It is good to know, for example, that the Elm, so beloved of planters of street trees, no doubt because of its amenability to transplantation, is, at all events in some American cities, giving place to the Oak as a street tree. Thus the new parkways in the neighbourhood of Boston have, during the past twenty years, been planted with Red Oaks, so that in course of time they should present a magnificent spectacle. Experience in the Arboretum does not bear out the prevalent opinion that Oaks are slow-growing. Of those which were raised from seeds some fifty years ago, the species which have survived have proved themselves faster growing than other hard-wood trees, Elms, Maples, Walnuts, etc., planted at the same time. The tallest is Quercus palustris, and that of the greatest girth, Q. Bebbiana, a hybrid between the White and the Burr Oaks. In spite of the hard climate, some seventeen of the fifty-five species of Oak which become trees in the United States are flourishing at the Arboretum. Among this number, however, is no evergreen species. Asiatic, including Japanese and Korean, species of Quercus do well in the Arboretum, which contains fine specimens of Q. variabilis and Q. dentata. The readiness with which species of Oak hybridise would seem to offer a great opportunity of increasing the number of forms capable of flourishing in northern regions where the climate is too severe for the best of the true species. The hybrids, as is usually the case, are quick-growing, and would therefore seem the more likely to be able to fit their lives into the short summers of northern countries. The chief difficulty in the way of success of species and hybrid Oaks as ornamental trees lies in their repugnance to transplantation. If they are to succeed Oaks should be planted permanently before they are more than two years old.

---

* *Journal of Agricultural Research*. XXVIII, No. 1. Washington, D.C., 1924.

* *Bulletin of Popular Information*. Arnold Arboretum. New Series, Vol. IX., 16.

"Gardeners' Chronicle" Almanack for 1925.—We shall publish in our issue of January 10 a *Gardeners' Chronicle* Almanack for the year 1925. In order to make it as useful as possible for reference we shall be obliged if Secretaries of Horticultural, Botanical, and Allied Societies, or any of our correspondents WILL SEND US IMMEDIATE INFORMATION OF ALL FIXTURES FOR THE ENSUING YEAR.

British Sugar Beet Cultivation.—The Government has decided to adopt and carry out the proposals made by the late Government for the grant of a subsidy for a period of ten years on a diminishing scale to sugar manufactured in this country from home grown Beet, coupled with a minimum price to the growers in the initial years. The necessary measures have been prepared and will be presented to Parliament when it meets for business. It will not be possible to complete all the stages before Christmas, but it is the intention of the Government to secure their passage into law without any avoidable delay. The proposed subsidy, which will apply to sugar manufactured during the current season, will be at the rate of 19s. 6d. per cwt. for the four years from 1924–25 to 1927–28 inclusive; at the rate of 13s. per cwt. for the three following years; and at the rate of 6s. 6d. per cwt. for the three final years. These rates will apply to sugar of a polarisation exceeding 98 degrees; for sugar of lower polarisations the rates will be reduced according to scale. The subsidy has been fixed at a rate which will enable the sugar factories to pay Excise Duty at the preferential rate, which at present is 9s. 8⅜d. cwt., and the industry would not be adversely affected in future by any reduction in the Customs Duty on imported sugar, since the Excise Duty would be proportionately reduced at the same time. It will be a condition of payment of the subsidy that the sugar manufacturers should pay during the first four years a minimum price of 44s. per ton of Beet of fifteen-and-half per cent. sugar content, with an addition or reduction of 3d. per ton in respect of each one-tenth per cent. of sugar content above or below fifteen-and-a-half per cent. The Government proposes also that in the case of any new sugar factories it shall be a condition of the payment of the subsidy that not less than seventy-five per cent. of the value of the machinery and plant shall be of British manufacture, unless the Minister of Agriculture for any special reason dispenses with this condition.

Agricultural Wages Board.—The first meeting of the Agricultural Wages Board was held on the 25th ult., at the Board's office at Gwydyr House Annexe, Whitehall, the Chairman, Lord Kenyon, presiding. The Minister of Agriculture, the Rt. Hon. Edward Wood, M.P., was present at the opening of the proceedings, and gave an address of welcome to the members, after which the Board adopted standing rules of procedure and considered various questions of administration. The Chairman subsequently entertained the members and officers to lunch. The next meeting of the Board will be held on December 18.

Iris unguicularis.—Mr. D. Chaplin, Frognal Gardens, Sunninghill, Ascot, informs us that Iris unguicularis opened its first flower this season (October 30), this being fifteen days earlier than in 1923, when the first flowers appeared on November 14.

The Future of Belle Vue Park, Berlin.—It is rumoured in Berlin that the famous Belle Vue Park, Berlin, which has existed since the end of the eighteenth century, may be about to undergo a change of character, being merged in the adjoining Zoological Gardens, and denuded of the fine trellis work which has always surrounded it. Whatever advantages such changes might be supposed to have, opinion in gardening circles is steadily opposed to them, as Belle Vue in the character of a mere adjunct to the Zoological Gardens would entirely lose its horticultural significance.

Mr. W. J. Godfrey.—Although well known to horticulturists as a raiser and grower of Chrysanthemums, Mr. W. J. Godfrey has nevertheless done excellent work in other directions. It may be news to many of our readers that when he commenced business about forty-three years ago, the first new subject he introduced was a Potato which he named Queen of the Earlies. This was subsequently sent to America. Florists have much cause to thank Mr. Godfrey for his introduction of the Godfrey Arum, which is one of the most popular varieties for market use. He has also taken a hand in the improvement of both border and tree Carnations, and so long ago as 1902 he predicted that in about ten years' time there would be a marvellous change in the extent and methods of the cultivation of winter-flowering Carnations, and his prediction came true.

MR. W. J. GODFREY.

Pelargoniums, especially of the show and regal sections, have been the subjects of Mr. Godfrey's work as a raiser, while the Canterbury Bell and Oriental Poppy are others of his specialities. The first new Chrysanthemum introduced by Mr. Godfrey was named Beauty of Exmouth, and this was sent out in 1892. Queen of the Earlies which came two years later was a variety which held a very high position among market growers for many years. Many of the older Chrysanthemum enthusiasts will remember the sensation caused when Mr. Godfrey introduced Bessie Godfrey, Godfrey's Eclipse, Sensation, Mrs. W. Bryce, and Mafeking Hero. Mr. Godfrey has steadily continued his work among Chrysanthemums, and has been particularly successful in raising useful single varieties, among which Molly Godfrey and Lady Astor may be cited as excellent and popular sorts. It is due to Mr. Godfrey that we have the long, narrow, tapering tin tubes now used by the hundred thousand by those who arrange large stands of flowers at the various exhibitions. These tubes are almost unbreakable, and as they may be packed one inside the other they occupy little room, while the wooden "feet" may be strung together and also packed in a comparatively small space. Mr. Godfrey takes an interest in local affairs and has occupied the position of Mayor of the town of Exmouth, where he has so long resided, and of which, as becomes a Devonian, he is very proud.

Fruiting of Cytisus Adami.—At the meeting of the Linnean Society, held on the 20th ult., Miss E. M. Blackwell showed Cytisus Adami in fruit. The fruiting of this graft-hybrid is of rare occurrence, but took place last summer in the Botanic Garden of Royal Holloway College, the tree bearing fruits not only of the hybrid, but also of its parents, C. purpureus and C. Laburnum. Though the tree has been planted about thirty years, and has borne three kinds of flowers, it has never till this year borne three kinds of fruit. Those of C. purpureus are borne singly, and are flat and erect; those of C. Laburnum are in long racemes of fifteen pods and more, but C. Adami has them by twos or threes at the apex of pendent racemes which have had ten to twenty flowers. Hildebrand records that in 1904 some seed of the hybrid was obtained; from these two seeds typical Laburnum plants resulted; the same thing happened in 1906. Four years ago Dr. A. W. Hill, F.R.S., Director of the Royal Botanic Gardens, Kew, obtained from his private garden at Watford some fertile seeds, which have germinated and are growing at Kew. In the present case it was found that each fruit was an insect-gall; Mr. F. W. Edwards, of the British Museum, has identified the insect as a species of Asphondilia, several members of which attack Sarothamnus scoparius. From one of the pods there emerged a male Chalcid wasp, Pseudocatalaccus asphondilia, a well-known parasite, of which the male is rare, according to Dr. James Waterston. Cross-sections of the three fruits show that, whereas C. Laburnum and C. purpureus have a strong sclerotic inner lining, the fruit-wall of C. Adami is soft throughout.

Manuring of Potatos.—Trials to discover the effects of artificial manures in increasing the yield of Potatos, carried out at the Storrs Agricultural Experiment Station (State of Connecticut)[*] confirm the wisdom of the current practice of applying a complete fertilizer to land which is to be planted with Potatos. The results of the trials show that the best mixture for average land is one containing per acre, 100 lbs. of ammonia, 120 lbs. of phosphoric acid, and 80 lbs. of potash.

New Superintendent of Dunfermline Parks.—At a meeting of the Carnegie Dunfermline Trustees, held on the 29th ult., Mr. William Graham was appointed Superintendent of Cattencrieff Park, etc., in succession to the late Mr. Dunagan. Mr. Graham held the office of chief gardener under the late superintendent.

Winter-flowering Begonias at Kew.—Winter-flowering Begonias are at the present time providing a very rich display of bright colours in the Conservatory (No. 4) at Kew, and for the enlightenment and education of visitors many varieties depicting the evolution of this wonderful race of plants is exhibited, together with a brief historical note which reads as follows: "Begonia socatrana was introduced from the island of Socrata in 1880 by Prof. Bayley Balfour, of Edinburgh Botanic Garden. This in itself a beautiful winter-flowering species proves of immense importance as the progenator of our present-day race of winter-flowering Begonias. From 1883 onwards Messrs. J. Veitch and Sons produced many fine winter-flowerering varieties by intercrossing Begonia socatrana with various tuberous-rooted varieties some of the latest hybrids being Exquisite, Fascination, and Optima, as shown in this group. Note how their leaves resemble the offspring of the Andean species. They have never been commonly cultivated, this owing to certain cultural difficulties. Mons. Lemoine of Nancy in 1892, crossed B. socatrana with the South African Begonia Dregei: the following year, 1893, they sent out the resulting hybrids, Begonia Gloire de Lorraine, of which there are now several varieties including some of American origin, such as Glory of Cincinnati and Mrs. Petersen." B. socatrana and B. Dregei are shown with Gloire de Lorraine and the varieties Turnford Hall (white) and Mrs. Rothschild (slightly deeper in colour than the type). The American varieties Glory of Cincinnati, which was obtained by crossing B. socatrana and a seedling from Gloire de Lorraine, has a neat habit, the flowers being of rich, lustrous pink; while Mrs. Petersen, a more recent introduction, has deeply metallic foliage and rose-pink flowers. Optima, salmon; Exquisite, rose-salmon; Fascination, salmon-pink, and Mrs. Heal, carmine-rose, are also shown in large batches of well-grown plants, while other species and hybrids include B. acuminata, a species from Jamaica with white flowers, and Gloire de Sceaux, a tall-growing hybrid between B. socatrana and B. Roezlii, introduced by Lemoine in 1887; the last-named makes an admirable pot plant and possesses deep, metallic, orbicular foliage and rose-carmine flowers and is an admirable subject for the background of the staging. A large number of interesting species are also in flower in the T-range, which is situated close by the conservatory.

---

[*] *Biennial Report*: State of Connecticut. Public Document No. 34.

Appointments for the Ensuing Week.—Sunday, December 7: Wakefield and Northern Tulip Society's meeting. Monday, December 8. United Horticultural Benefit and Provident Society's meeting; Bath Gardeners' Society's meeting. Tuesday, December 9: Jersey Gardeners' Society's meeting. Wednesday, December 10: Morley and District Paxton Society's meeting; East Anglian Horticultural Society's meeting; Wimbledon Gardeners' Mutual Improvement Society's meeting. Friday, December 12: Royal Horticultural Society of Ireland Council meeting.

Gardeners' Chronicle Seventy-five Years Ago.—*Successful Transplanting of a Large Cedar.*—This operation took place when I was gardener at Dyrham Park. This tree stood in front of a new conservatory that was being built; it was thirty years old, twenty feet high, two feet in circumference at one foot from the ground, and forty-eight feet round the extremities of the branches. I cut the roots all round to the very bottom, four feet from the stem, in April, in order to cause it to produce young fibres to support the ball, as well as to secure the life of the tree. In the following November it had made roots six inches long; but I am now of opinion that before large trees are moved the whole of the large roots ought to be cut two years previous to lifting. The next point is to make a puddle for planting; this ought to be so thick that the ball will make its way slowly to the bottom of it. Then guard against high winds; the most effective way of doing this, perhaps, is to join cross pieces of wood enclosing the stem, and to drive down a post at each end of such pieces, three or four feet into the solid earth, nailing their tops firmly to the cross pieces just mentioned. If this is properly done no winds will overturn the tree. When I was at Castle Toward, in the years 1820 and 1821, all round the new castle, to the amount of many acres, was planted with trees of various sorts thirty and forty years old, from the thickest parts of the woods. They were planted, without preparation, forty to fifty feet apart. Of these, I was told by the late owner, Kirkman Tinly, Esq., that only a third died. I believe that a tree of any age may be removed; but according to its age, corresponding care must be used, both in the previous and after management of it. *James Cuthill, Camberwell, Gard. Chron., December* 8, 1849.

Publications Received:—*Illustrations of the British Flora.* L. Reeve and Co., Ltd., 6, Henrietta Street, Covent Garden, W.C. 2. Price 12s. net. *My Garden Book.* By John Weathers. Longmans, Green and Co., 39, Paternoster Row, E.C. 4. Price 36s. net.

THE ROSE GARDEN.

ROSE GORGEOUS.

Throughout the summer and autumn of this year the bed of Rose Gorgeous (Fig. 319) in the new Rose Garden at Kew has been a source of great pleasure, for the large blooms of this variety have been produced in great profusion and, what is an added distinction, they developed and retained their form. This variety is comparatively modern and was introduced in 1915 by Messrs. Hugh Dickson, Ltd., of Belfast. The colour is of a tone seldom met with, and may best be described as orange-yellow with veining and flushes of salmon and reddish-copper. The plants grow well, are of neat habit, and well suited for garden display.

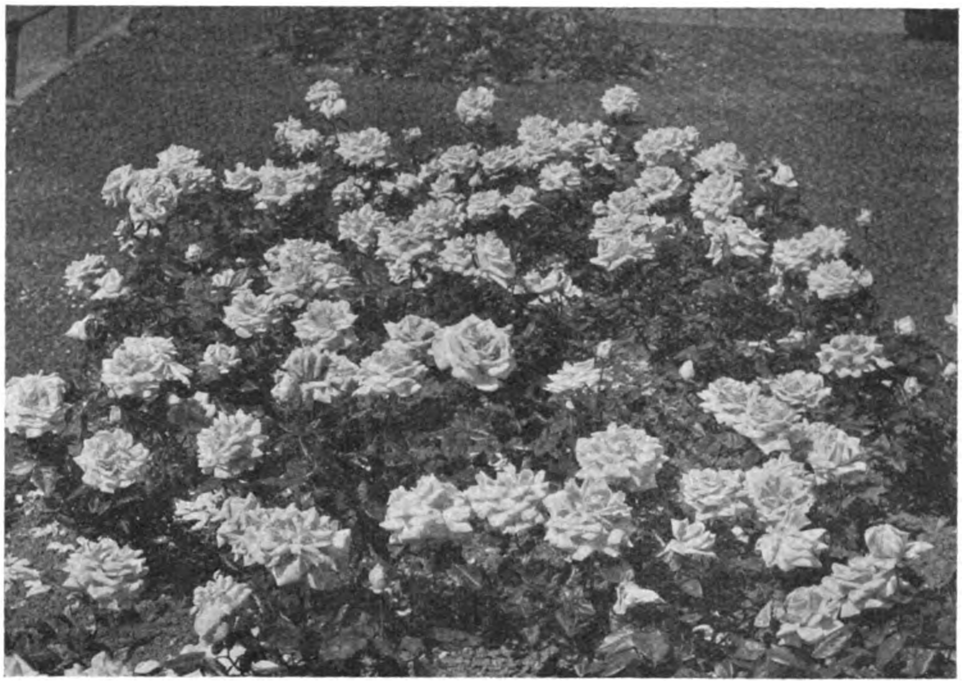


FIG. 319.—A BED OF ROSE GORGEOUS AT KEW.

CULTURAL MEMORANDA.

FORCING WINTER FLOWERS.

In establishments where continuous supplies of cut flowers are required preparations for forcing suitable plants should be made without further delay. The house or pit to be set apart for this purpose should be thoroughly cleansed by washing the glass and woodwork and whitewashing the walls. Fallen tree leaves are plentifnl at this season, and if they have been stored when dry, may be mixed with a little litter from the stable, to afford a steady and gentle bottom heat for a long time. It is very important that the leaves used are dry, for upon this depends the length of time that they will generate gentle warmth; if they are wet, the heat produced will be rapid but will soon be expended.

The moist, genial warmth supplied by a bed of leaves is far more suitable for forcing plants than the dry heat derived from heated water-pipes. Do not mix too much litter from the stables with the leaves, or the ammonia from the dung will prove injurious to Azaleas and such plants if placed upon the bed directly it is made.

Lilacs, Azalea mollis, Guelder Roses, Deutzias, and other suitable shrubs may be plunged in the bed after it is found that the heat is not too strong. Azalea indica and its varieties should not be plunged, but stood upon the surface of the bed. Before introducing the latter plants, wash them with tobacco water in which a little soft soap has been dissolved, to destroy any thrips that may be present on the plants, for after introduction into heat these pests increase very rapidly.

Lily-of-the-Valley should be plunged in the bed of leaves and their crowns entirely excluded from light. They will grow rapidly and unfold their choice and delicate sprays of sweet flowers.

A few of the earliest Hyacinths, Tulips, and Narcissi may also be stood on the hot-bed. At first the bed of leaves will supply all the heat that is required, but if the nights prove cold, maintain the night temperature at 50° by means of the hot-water pipes. The plants should be syringed twice daily during bright weather after they have started into growth, and a little ventilation during the morning given when the weather is favourable, but the house should be closed early in the afternoon.

If Lilacs are required to produce white flowers, force them into bloom in brisk heat in the dark, or place them in a warm pit and exclude the light by means of mats secured upon the frame. A batch of Cyclamens will, if required, soon come into flower on a shelf near the roof-glass in a warm house.

A few plants of Epacris may also be introduced to heat; they will flower in a temperature of 50°, but they should not be stood direct on the bed; they may be arranged on a board laid on the bed of leaves. I prefer bringing them into flower without the aid of bottom-heat.

In addition to those I have enumerated, the grower will be able to draw supplies of cut blooms from such subjects as perpetual-flowering Carnations, Lilies of various kinds, Chrysanthemums, late varieties of which will carry the season well into the New Year; Ericas in variety, the white-flowered species being especially in demand for floral designs, and Poinsettias, which are especially suited for the decoration of churches, corridors, etc. *James A. Paice.*

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Zygopetalums.—Zygopetalum Mackayi generally does best in a warm, stove-like temperature, and at this season is sending out flower spikes from its partly-developed pseudo-bulbs. From now onwards until the flowering season is over, extra care must be taken when applying water to the roots, for an excess of moisture may cause the leaves to become spotted; water should only be applied when the compost has become dry, when sufficient should be given to soak the rooting materials thoroughly. After the flower spikes are cut, the plants may be re-potted if necessary. This is a free, deep-rooting species, therefore plenty of pot room and a good depth of compost are required. The pots should be filled to about one-quarter their depth with drainage materials. A mixture of good, fibrous loam and Osmunda-fibre, with a sprinkling of crushed crocks, forms a suitable compost. Z. crinitum, Z. Clayi, and others of this type, together with Z. Perrenoudii, should be afforded similar treatment. These species thrive best in a moist, shady position in the intermediate house. Z. Balliae, Z. rostratum, and Z. Roeblingianum should be grown in a similar position, and the surface moss should be sprinkled frequently to keep it in a green, healthy condition. Z. màxillare and Z. Gautieri are producing new roots, and may be re-potted at this season. These Orchids have a rambling habit, and are not suitable for growing in pots or pans; they are best fixed on a portion of the stem of a Tree-Fern. If necessary, the rooting space may be extended by wiring another piece of stem on top of the old block. The roots should be kept moist at all times.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Planting.—Although November is probably the best month of the whole year for planting, it is seldom possible to complete the work during that month and it should be carried out as early as possible in December. The transplanting of deciduous trees and shrubs may be continued whenever the soil and weather are favourable, but it is not wise to carry out the work when the soil is sticky or when frost is in the ground. Where the replanting of herbaceous borders has not been finished, this work should also be pushed forward whenever favourable conditions occur, and on completion of the work spare plants should be planted in rows in the reserve garden for the conservation of stock and the provision of cut flowers in their season.

Plants in Frames.—Plants growing in cold frames, whether planted out or in boxes or in pots, should be examined frequently and be kept free of decaying foliage. Water should be afforded only when moisture is absolutely necessary and then in sufficient quantity to moisten the whole of the soil. Antirrhinums sown last month may be pricked off if the seedlings are crowded, but generally any repotting or pricking off which has not been carried out at this date is better deferred until the turn of the year. Provision should be made for covering the lights during very severe weather, but all coverings should be removed as early as possible in the mornings, and air should be given freely on all favourable occasions. In cold frames damping is the worst trouble the grower has to contend with at this season, and advantage should be taken of every favourable opportunity for removing the lights entirely, particularly after watering has been performed.

Kniphofias.—Although these plants are perfectly hardy in the southern counties if planted in well-drained soil, they are apt to suffer if left unprotected on heavy soils and in exposed positions. Damp often does greater harm than frost, hence in applying protecting material, it is a mistake to use litter which will collect and hold moisture, and thus proves harmful instead of helpful. A layer of coal ashes round the plants and their own foliage left on them, usually affords ample protection. The choicer and more delicate species should not be attempted on heavy, low-lying soils. Broad masses of the strong growing K. aloides and its varieties are very effective on the outskirts of the lake or in any other spacious part of the garden, and the brilliantly coloured inflorescences frequently remain in beauty until well into the winter. It is never advisable to replant during the winter but just as growth is about to commence in spring.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Chrysanthemums.—To ensure a supply of good, sturdy cuttings when the propagating time arrives, the plants should now receive careful attention. Some varieties which produce root cuttings very freely should have their suckers well thinned during the flowering period. When cutting down the plants after flowering it will be advisable not to cut too low the stems of those varieties which are shy in producing basal shoots; these too, may be given a top dressing of light sandy soil and be syringed daily to promote growth. The pots containing the old stools should be placed in a cold frame or in a cool house, where they will obtain the maximum amount of light. Where the plants are being grown for large exhibition blooms, an early start is desirable, and the second week in December is a good time to strike the cuttings, which should be rooted and grown on under the coolest conditions possible. A frame or pit from which frost is excluded, or a propagating frame, placed near to roof-glass in a resting fruit house, may be utilised for the purpose. To clear the cuttings of aphis, the house containing the old stools should be fumigated on one or two occasions some few days before the cuttings are removed.

Bulbs.—The earliest potted batches of Hyacinths, Narcissi, and certain Tulips have now made sufficient growth to warrant their removal from the plunging materials. An examination of the successional batches should be made weekly, from now onwards, removing only those which have filled their pots with roots. These should be placed in cold frames which should be kept darkened by a covering of mats for a week or so, afterwards gradually exposing them to full light.

Stove and Greenhouse Climbers.—Any work that can be performed during this month such as pruning and cleansing the plants will help to relieve the pressure of work in the New Year. Thin out the growths of Stephanotis floribunda and thoroughly cleanse the plant and the roof upon which it may be growing. To check the ravages of mealy bug, periodical syringings with a safe paraffin emulsion should be given. Allamandas, Dipladenias, Clerodendron Balfouriana and Luculia gratissima, should be allowed a period of rest after flowering, during which very little water at the roots will be required. The cutting back of these plants, however, may be deferred until the New Year, though the cleansing of the plants may now be undertaken.

Potting Materials.—If not already done, an effort should be made to get in store the necessary stock of loam to meet the requirements of the next twelve months. As the fresh tree-leaves are being collected from the pleasure grounds, the cleanest from the Oak and Beech trees should be stored apart for future use.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Apricots. — Old trees that have become unfruitful and past their best should be dug up, and their places taken by young trees. Dig the ground thoroughly, remove all the old roots, and substitute some fresh turf from an old pasture for that removed, incorporating a quantity of mortar rubble and coarse bone meal with the soil as planting proceeds. Plant the trees at the same depth as they were in the nursery, making them very firm by ramming the soil about the roots, taking care not to injure the latter. Any roots with rough ends should be trimmed with a sharp knife. Manure should not be dug in the soil at planting time as it would tend to make the growth too gross, but a light surface mulch of well-decayed manure will benefit the trees. Fasten the growths loosely to the wall to allow the trees to sink a little, and, after a short time, prune the branches to about half their length to encourage them to break freely in the spring. Established trees may now be pruned and nailed; at the same time make sure that the existing ties are not cutting into the bark. Apricots are prone to lose some of their branches, therefore it is wise to train in young wood where possible to take their places. Moorpark is still one of the best varieties, although Blenheim and Large Early are both good sorts.

Staking Trees.—Standard trees in orchards and gardens should be examined, and if requiring new stakes, should be attended to as soon as possible, otherwise they are apt to be blown about during rough weather. This applies especially to young trees freshly planted, as they cannot possibly make many roots this season to hold them firmly in position. Beckett's patent tree ties are the best to use as fasteners; they are made of broad webbing, secured with a buckle, thus enabling the tree to be loosened as the stems of the trees swell, and they do not cut into the bark as string does.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Early Strawberries.—Where ripe Strawberries are desired by the second or third week in February, preparations should now be made for forcing the plants. Strawberries force more readily when the crowns have been exposed to frost, and where the plants have been fully in the open and only protected during very severe weather, the 12° of frost registered at the time of writing should be all in their favour. Where a regular supply of forced berries is required a house should be set aside for the forcing of the plants, and it should be made sweet and clean by cleansing the woodwork and glass and lime-washing the walls. This will make the house light, and plenty of light is necessary for the early forcing of Strawberries. The night temperature during the early stages of growth should be as near 45° as possible; should the weather prove mild, a few degrees higher will not prove detrimental to the plants. For this early batch of Strawberries a good body of fermenting material placed immediately under the shelves on which the plants are placed will prove very benficial, giving out continuous moisture and gentle warmth, which should provide sufficient heat during mild weather. Should fire-heat be required to keep the temperature at 50° during the day, this is best applied in the early morning, and that is also the best time to water and syringe the plants. Tepid water should be carefully and judiciously applied during the early stage of growth; once the roots are active the plants must never be allowed to suffer for lack of moisture or they will soon become infested with red spider. In gardens where no special house is available for the forcing of these fruits, the first batch of plants may be introduced to warmth when the early vinery and Peach house are closed for forcing. The plants should be cleared of all dead leaves and weeds, and their receptacles made clean by washing before placing them on the shelves in the house; the drainage also should be examined and made efficient where necessary. Before top-dressing the plants with a compost rich in phosphates, it will be wise to dip the plants and pots in a mixture of soapy, sulphur water as a preventive measure against mildew and red spider; keep a careful watch for mildew during dull, sunless weather.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Asparagus.—Lift roots of Asparagus intended for forcing. Prepare a bed of leaves in the forcing house; tread the leaves together and place a layer of soil on top of them. The Asparagus crowns should be covered with three inches to four inches of soil. Successional batches of roots may be lifted at intervals of three to four weeks to ensure a succession of stems. When the roots are placed in position on the bed they should be watered liberally.

French Beans.—Plants in pots should be top-dressed with good loamy soil mixed with a suitable artificial manure. Careful watering of the roots and ventilating the house are essential to success. Maintain an even temperature. Birch twigs are suitable for supporting the shoots.

Cucumbers.—Plants in bearing should receive careful attention in watering the roots and thinning the growths. A top dressing of rich material will be necessary to enable the plants to continue cropping. The soil used for this purpose should be warmed before it is placed over the roots, as cold soil would give the plants a check, that would result in several evils, including curling of the young fruits.

Tomatos.—Water Tomato plants in bearing with liquid manure once a week. The leaves should be shortened to allow light to enter the plants and ripen the fruits. Admit air on favourable occasions; a certain amount of fire-heat will be needed to exclude frost and dry up superfluous moisture.

Broccoli.—Plants with curds turning in may be lifted and placed in a deep frame where sashes can be placed over them in case of frost and rough weather, or they may be pulled up with the roots intact, and hung in a shed head downwards.

Remarks.—During frosty weather advantage should be taken to wheel manure on the ground whilst it is hard. Do not trench land when it is frosty, for cold soil turned in would cause the ground to remain cold and wet until early spring. Ground turned over in winter should be left as rough on the surface as possible to expose it to all the frost possible.

HARDY FLOWER BORDER.

HERBACEOUS PAEONIES.

It is difficult to pay just tribute to the decorative value of Paeonies for garden decoration or for use as cut flowers in the home, yet it is surprising that we rarely see the bright fresh colours of these flowers displayed with the same profusion as we do those of the Dahlia, Chrysanthemum, and the Rose, all of which have a band of enthusiastic cultivators. But just as with all flowers which have had years of patience and toil bestowed upon their improvement, the interest comes in leaps and bounds, and at the present time there seems to be more than ordinary attention displayed in the Paeony, a flower which, when its cultivation is carried on with usual care, will always be appreciated.

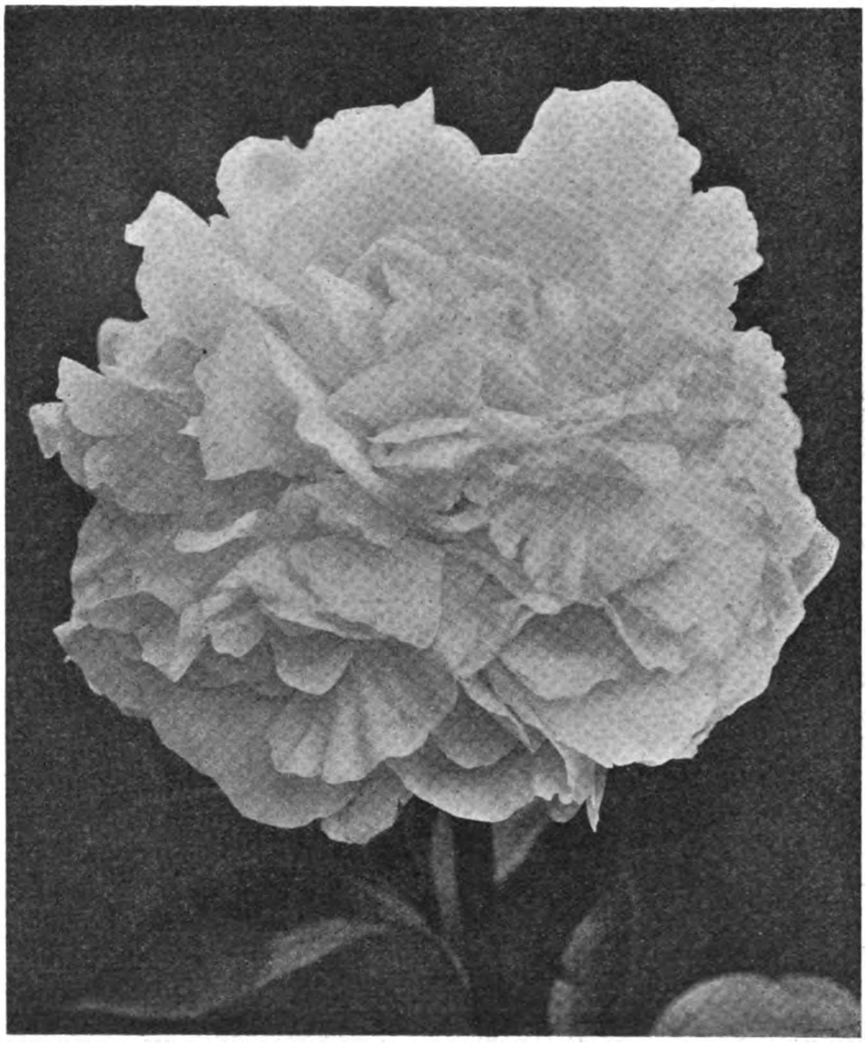


FIG. 320.—DOUBLE PAEONY MADAME EMILE LEMOINE.

Paeonies require no extravagancies in regard to culture; they may be left for years without disturbance; their foliage as it unfolds in the spring is alone of sufficient beauty to merit them a place in the garden, while the flowers are large and attractive, but by no means coarse. Paeonies bloom also at a time when they can be used in charming combination with the bearded Irises, and the flowering season may be extended by the choice of early, mid-season, and late varieties. Nor is the Paeony lacking in fragrance; indeed, some sorts possess a perfume as fragrant as that of the sweetest Rose. How is it, then, their cultivation is not more general? In America the flower is immensely popular; America has its Paeony Society, with thousands of members, and no garden in U.S.A. is considered complete without its Paeony clump. "Plant in quantity and wherever space permits," is the usual type of advice offered in the U.S.A. The French growers too have raised some of the finest varieties, yet in England there are not more than half-a-dozen firms, if so many, who have taken up the Paeony with more than passing fancy. One of the staunchest Paeony devotees in America—Mrs. Harding—has done more than anyone, I believe, to spread the value of the flower, and with her customary generosity she has offered three cups to the Royal Horticultural Society for award to the best three vases of Paeonies. It was disappointing to see the poor quality of the flowers sent from the two or three exhibitors who entered for the prize this year, and the Council very wisely withheld the awards.

There are a few matters in the cultivation of the Paeony which must be considered. October is usually regarded as the best month for planting, as the new roots awake into activity about this time, but planting may be carried on until Christmas and provided the nurserymen send the plants in damp moss they suffer little from being re-rooted a little. Where clumps are already established in the garden and it is found necessary to lift them for division, it is not too late to do so, but on no account should the operation be delayed. The thick, thong-like roots should be cut back before planting, and the roots should be placed so that the buds will not rest under more than three inches of soil. Just recently I had to move some Paeonies to another part of the garden, and it was surprising to see the different colours in the buds produced under-ground, and no doubt the expert would be able to identify varieties from the colour and shape of the buds. Some are deep mahogany-red, others dull brown, while there are shades of straw-yellow, yet each variety produces similarly coloured buds. I think too, it is worthy of record that even at the end of November the flower is already formed in the bud. I had occasion to examine half-a-dozen buds which had become detached whilst lifting and rehandling the plants, and when the bud was stripped of its leaves or when cut longitudinally into halves with a sharp knife, the embryo flower could readily be discerned—just as easily in fact as it can be observed in a Narcissus or Tulip bud in the autumn.

At this time of the year, where there are established clumps, good farmyard manure should be incorporated with the soil, for the Paeony requires plenty of food, but it is a wrong procedure to cover the crowns with the manure, for this tends to encourage the botrytis disease which not only spoils the flowers, but which will in time entirely destroy the plant if allowed to go unchecked. If new plantations are to be made now the soil should be enriched in the spring after planting unless it has some months previous received a good dressing of manure, for the Paeony will not tolerate contact with rank animal dung.

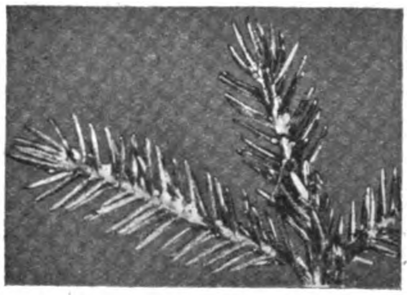


FIG. 321.—STEM MOTHER OF CHERMES PINI ON PICEA ORIENTALIS IN SPRING: KEW.

There is one other important cultural item that must be remembered. All the dead shoots should be removed from the plants during the autumn, for if allowed to remain they tend to act as a harbourage for slugs and diseases. Slugs have proved to be a great menace to Paeonies, and I have known occasions when they have so stripped the buds that not a single shoot has appeared above ground in the spring.

Of varieties there is a wide range of choice, for their number runs into many hundreds. It is this difficulty of making a selection that I believe prevents many people making a start, and, moreover, the nomenclature of the Paeony is in a very confused state owing to different raisers giving the same name to totally different plants. This has happened in many instances, and one may order the variety Sarah Bernhardt from one grower and receive a plant which gives violet-purple flowers, while another nurseryman will supply a far better variety of pink colour under the same name. But you can find no real fault with your nurseryman, for in the one case you have been supplied with the Sarah Bernhardt of Dessert, and on the other with the Sarah Bernhardt of Lemoine. If I were asked to make a choice of six inexpensive double-flowered Paeonies I would select Festiva Max (Milliez), white and large, with a streak of red appearing here and there in the central petals; Madame Emile Lemoine (Lemoine) (Fig. 320), white, softly tinted with lilac-pink, and exceptionally large when disbudded; Sarah Bernhardt (Lemoine), very sweetly scented, large and full, with soft pink petals bordered with a white margin, thus giving the flower a silvery pink hue; Duchesse de Nemours (Calot), a very free-flowering variety with cream-white flowers, and one grown extensively for market; Madame de Vatry (Guerin), the guard petals of which are rose-coloured, while the centre of the bloom is deep cream; Mons. Charles Leveque (Calot) (syn. Mademoiselle Leonie Calot), a very handsome, free-flowering, pink variety. These will, I believe, meet the tastes of most folks. *K. R.*

CHERMES (PINEUS) PINI (L.) BÖRNER.

THE PINE CHERMES IN THE ROYAL GARDENS OF KEW.

The family Chermesidae, to which this insect belongs, forms one of the group of so-called Plant Lice, which are classified, under the sub-order Aphidoidea, among the Hemiptera or Sucking Insects.

The family differs from its nearest relatives in the fact that the insects belonging to it choose for their host plants coniferous trees solely. In common, however, with other members of the plant lice group, the Chermes life-history exhibits in its highest development great complexity. Two species of Conifers are necessary for the full life-cycle, on one of which, called the primary host, a gall is formed, while on the other or secondary host, gall formation is not usually found. The primary host tree is always a member of the genus Picea (Spruce), while the secondary host may be any one of the genera Larix (Larch), Pseudotsuga (Douglas Fir), Tsuga (Hemlock), Abies (Silver Fir), and Pinus (Pine). Migration between the two hosts is effected by winged generations. Several species of the family are already well-known to foresters and arboriculturists, C. abietis, the chermes of the Norway Spruce and the common Larch being perhaps the most familiar.

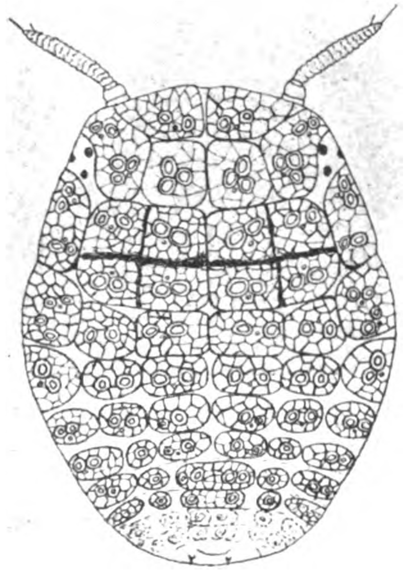


FIG. 322.—FIRST STAGE LARVA OF THE GALL FOUNDRESS; ON PICEA ORIENTALIS; KEW: × 160.

The complete life-cycle of Chermes pini under British conditions is not, however, so well known, and the following study of it, based upon observations and experiments conducted at the Royal Gardens, Kew, during the last two years, may prove of interest.

Chermes pini chooses for its primary host plant, upon which the gall is formed, the Oriental Spruce, Picea orientalis, and for its secondary host several species of the genus Pinus. The gall generations on the Spruce may be considered first.

THE SPRUCE GENERATIONS.

The first stage larval forms of the Spruce generation may be found from September onwards, lying singly at the needle bases on shoots of the current year. The larvae, which are very minute, only measuring about ·5 m.m. in length, are black in colour, with the body sparsely covered by single coarse strands of white wool. Viewed under the microscope they present the appearance shown in Fig. 322, and the peculiar structure of the chitinous plates in dorsal view, furnishes an easy clue to their identity, as being quite different from any other chermes larvae, found on Spruce.

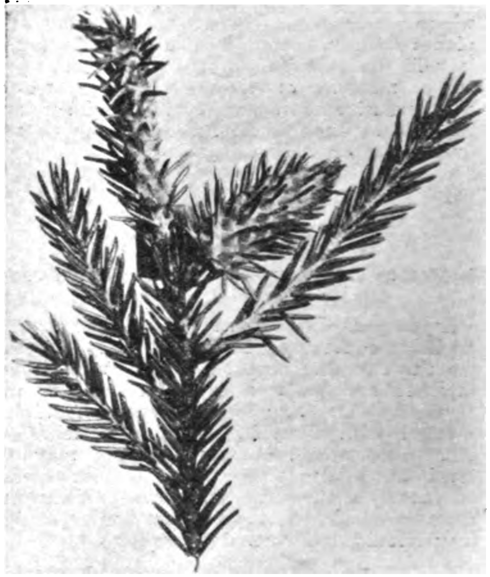


FIG. 323.—GALLS OF CHERMES PINI ON PICEA ORIENTALIS; KEW. NATURAL SIZE.

The winter is passed in this condition, and not until late in March, or early in April, do the young larvae show any signs of activity. March 20 was the earliest date at which development began in the open at Kew, but by keeping the larvae under cover in a warm atmosphere this date was anticipated by six or seven weeks.

The young larvae develop rapidly and in about three weeks have become mature stem mothers or foundresses (Fundatrices). The stem mother is dark brown to black in colour, about 1·0 m.m. in length, and thickly covered with a mass of white wool, which serves to conceal her, and also the eggs which she begins to lay soon after maturity. The number of eggs laid by each stem mother averages 450 to 500; they are reddish-brown in colour, slightly powdered with wax and as is usual in this family, each egg is borne at the end of a long, thread-like stalk. The egg-laying stem mothers with their woolly mass are conspicuous objects on the Spruce twigs by the end of April. (Fig. 321).

Early in May the first of the young larvae hatching from the eggs laid by the stem mother begin to emerge from the shelter of the woolly covering, and crawling up the twig, seek the young buds which are just beginning to open. Penetrating to the heart of the bud, they seek the young developing needles, at the bases of which they settle, and inserting their sucking tube or rostrum, commence to feed.

This marks the beginning of gall production, as the concentration of the larvae at the needle bases causes them to swell, and results in a transformation of the young twig, the basal portions of the needles forming part of a closed chamber in which the larvae live. The full development of the galls is complete in about a week, and the mature gall, which as a rule covers the whole twig, varies in length from half-an-inch to slightly under one-and-a-quarter inch (Fig. 323). The galls vary in form from elongate-oval to somewhat pear-shaped, and when mature they are deep rose-red in colour. Six weeks are passed in the shelter of the gall chambers, at the end of which time the larvae have attained the nymphal form, which foreshadows the appearance of the winged migrant. Early in July the gall chambers begin to open, revealing the nymphs, which are of a deep plum colour and thickly powdered with wax. These, on emergence, seek the nearest needle, upon which to settle and cast the nymphal coat, thus releasing the mature, winged form, or Gallicola migrans.

Gallicola migrans is a dark reddish-brown, four-winged insect, and measures about 1·5 m.m. in length. Soon after emerging from the nymphal skin she flies away, and seeks the needles of Pine upon which to settle. Under experimental conditions at Kew, Pinus sylvestris, P. cembra, P. austriaca, and P. montana were all selected as host plants by the insect, and this was also found to be the case in the open. Once settled upon the Pine needles the winged migrants exude from their wax gland areas quantities of white wool, which serves as in the case of the stem mother on the Spruce, to cover the eggs and young. From thirty to sixty eggs are laid by the Gallicola, and the larvae hatching from these seek the young shoots of the Pine, where they settle and pass the winter. The migration from the Spruce to the Pine is completed by the middle of August.

The Pine Generations.

The young larvae on the Pine do not always pass the winter in the first larval stage, development being carried in many cases to the fourth stage before the winter rest period arrives. These larvae mature late in March or early in April of the following spring and—as mature stem mothers—begin egg laying on the Pine branches. Each stem mother lays about one hundred and fifty eggs, the larvae from which hatch in ten to fourteen days.

Towards the end of May this first spring generation on the Pine shows signs of dimorphism, about fifty per cent. of the larvae assuming the nymphal form, while the remainder develop into wingless, stem mothers. The latter become the starting point of one or more generations of wingless individuals on the Pine branches throughout the summer, the number of which varies from season to season, depending on weather conditions. The final summer generation of larvae hatching on the Pine remains immature throughout the winter, and is joined there by the offspring of the gall migrants from the Spruce, already described.

The Winged Sexuparae and the Return to the Spruce.

As stated above, about fifty per cent. of the first summer generation on the Pine are nymphal forms, which develop into winged individuals, generally known as "sexuparae."

These winged forms begin to appear in great numbers from early June onwards, and shortly after maturity they seek the young needles of the Oriental Spruce, upon which they settle in masses, their white wool giving the terminal twigs of the Spruce the appearance of being tipped with snow (Fig. 324).

Observations and experiments upon the migratory habits of the sexuparae revealed two points of interest, viz.:—Under the close restrictions of cage experiment, they showed a distinct disinclination to settle upon the Spruce in the normal manner. This fact has already been commented upon by Paul Marchal, the well-known French authority on the Chermesidae, who states it as his opinion that these sexuparae require, before settling upon the Spruce, an active, migratory flight, which under the confined conditions of the experimental cage is rendered impossible. This explanation seems plausible in the light of outdoor observations at Kew during the season of migration, when the sexuparae of this species were seen flying about in large numbers above and around the Spruce trees before settling upon the twigs.

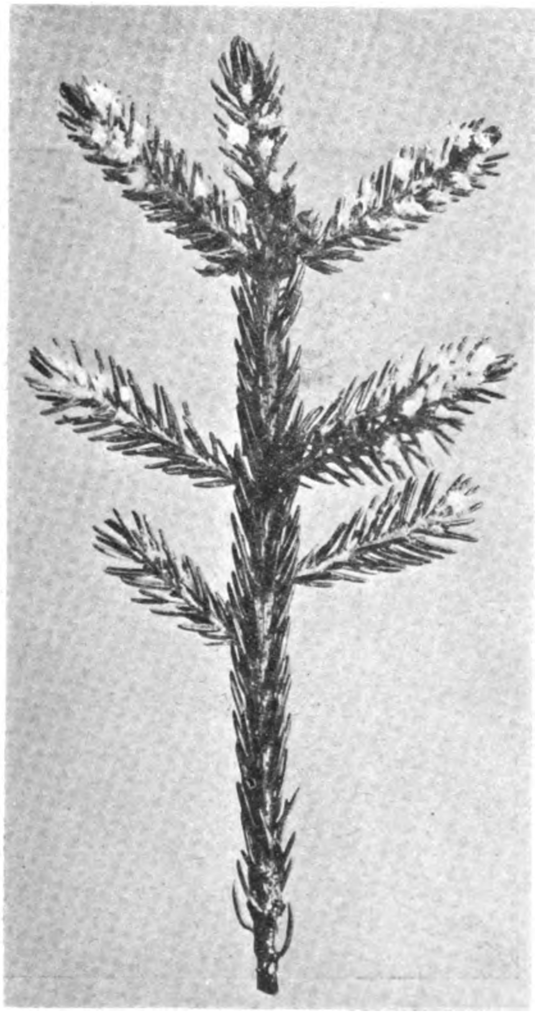


FIG. 324.—SEXUPARAE OF CHERMES PINI ON PICEA ORIENTALIS: KEW. NATURAL SIZE.

Again, it was observed in the open that, for some reason, so far unexplained, considerable numbers of the sexuparae did not seek their natural host plant, the Oriental Spruce, but settled and laid eggs upon the needles of the Lebanon Cedar (C. Libani). This aberration of habit was especially striking here, as the Cedars in question were close to the Oriental Spruce, and there was no shortage of suitable host trees upon which to settle. The development on the Cedar proceeded in an apparently normal manner for a short time, but the young larvae dying off soon after their appearance, the generation came to an end.

Under normal conditions, however, the sexupara settles upon the Spruce needles and there lays twenty to twenty-five eggs, which are of a bright red colour, and are markedly smaller than those laid by Gallicola migrans. They hatch in seven to eight days, and the young larvae, as a rule, pass through their stages in the shelter of the mother's body. This generation is the so-called "sexual" one, the male form appearing for the first and only time during the whole course of the two-year cycle. The mature males and females differ in a remarkable manner from the previous generations, being, in the first place, much smaller in size when mature, and resembling young larvae rather than full-grown individuals. The structure of the antennae in both the sexes is also peculiar, four joints in place of the usual three or five, being the rule.

The two sexes also differ somewhat in appearance, the body of the male being rather elongate and pointed while that of the female is more rotund.

Pairing takes place shortly after maturity, and the female, seeking out the protection of the bark scales, there deposits a single, fertilised egg, which in the space of about three weeks gives rise to the young larva of the gall foundress, with whose development the story of the life-cycle was begun.

A study of the amount of gall production on the Oriental Spruce at Kew showed quite clearly that the number of galls produced was very much inferior to that of the sexual forms to be found on the Spruce in the late summer. For this two reasons may be given: firstly, the inequality in numbers of the sexes in certain seasons is very marked, the predominance of females over males being in two cases counted, one hundred-and-twenty to five and fifty to one. This phenomenon, Marchal has termed "spanandry," or scarcity of males, and to its occurrence he attributes the comparative failure of the gall generation. Secondly, the presence of predaceous enemies, of which spiders may be mentioned as being among the most important, account for a large percentage of mortality among the winged sexuparae and their offspring. *R. N. Chrystal, B.Sc., Jodrell Laboratory, Royal Gardens, Kew.*

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM NOVELTIES FROM HAYWARD'S HEATH.

The first flowers of three magnificent new Odontoglossums are sent by Messrs. Charlesworth and Co., Ltd., Haywards Heath.

O. Figaro (Vardar × Aglaon) is a large flower of fine shape, and bearing distinct traces of O. Aglaon. The ground colour is white, the greater part of the surface heavily blotched with deep claret-purple. The front of the lip and bases of the petals are pure white. O. Thyades (Jasper × St. James) has broad-petalled flowers of rich Tyrian purple colour, a thin, white margin on the sepals and petals and broader margin on the lip, aiding to display the rich tints of the rest of the flower.

O. Minotaur (Cordoba × Clovis) is a fine successor of Messrs. Charlesworth's O. Purple Emperor class. The sepals and petals are deep violet-purple with white mottling on the margins and tips. The lip is similarly coloured and has a well-defined bright yellow crest.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard,* 1543.

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

THE WILLOWS.

IN any schemes for waterside planting the Willows are almost invariably the first trees and shrubs brought under review. The two outstanding reasons for this are their suitability of habit and their partiality for moisture at the roots. It should be remembered, however, that species of Salix are also valuable for planting in pleasure grounds, park, and woodlands where the soil is inclined to be heavy and moist rather than of a light and dry character.

The genus Salix is a very large one, comprising something like two hundred species and varieties with, in addition, many natural hybrids. No other family of trees contains such a large number of hybrids, this being explained by the fact that in most Willows the male and female catkins are borne on different trees. Being readily carried by wind, the pollen from a male tree alights on the female catkins of a different species. It is, perhaps, fortunate that the large majority of Salix species produce their catkins early in spring when, almost invariably, a large number of the female organs are damaged or destroyed.

While the family of Willows is a very large one, varying from tiny shrubs an inch or two high to tall timber trees up to eighty feet or one hundred feet high, comparatively few are of outstanding merit for ornamental planting. It is, perhaps, easiest to group them under five heads: (1) attractive specimen trees; (2) ornamental foliage shrubs; (3) showy catkin-bearing trees and bushes; (4) those with attractive bark, particularly in winter; and (5) interesting rock garden species.

Of genuine large trees the number available for general planting to provide a distinct and pleasing feature in the landscape is not large. While the beauty of these trees is nowhere more effective than by the waterside, specimen trees in pleasure grounds and parks are distinctly ornamental. The best known of all the tree Willows is Salix babylonica, the Weeping Willow, perhaps because of its association with Napoleon's grave at St. Helena. The Blue Willow—or Cricket-bat Willow, as it has become known in recent years—S. coerulea, is upright in growth, attaining a height of seventy feet to a hundred feet; S. alba, the White Willow, is a useful native tree for ornamental planting as it has pendulous branchlets; the variety argentea, perhaps better known as Salix regalis, is a beautiful tree with elegant, silvery foliage. S. Salamonii is represented at Kew by several very attractive specimens on the banks of the lake. It is a hybrid between S. alba and S. babylonica. S. elegantissima may be planted in the colder districts where S. babylonica does not thrive.

The Golden Willow, S. vitellina, with weeping branchlets, is particularly effective in winter with the brilliant yellow bark of the young twigs. S. fragilis, the Violet Willow; S. daphnoides, with conspicuous violet-coloured waxy bloom on the young shoots; the Bay Willow, S. pentandra, with large, rich green leaves; and S. viridis, a British Willow of wide-spreading growth, are all worthy of attention where space permits.

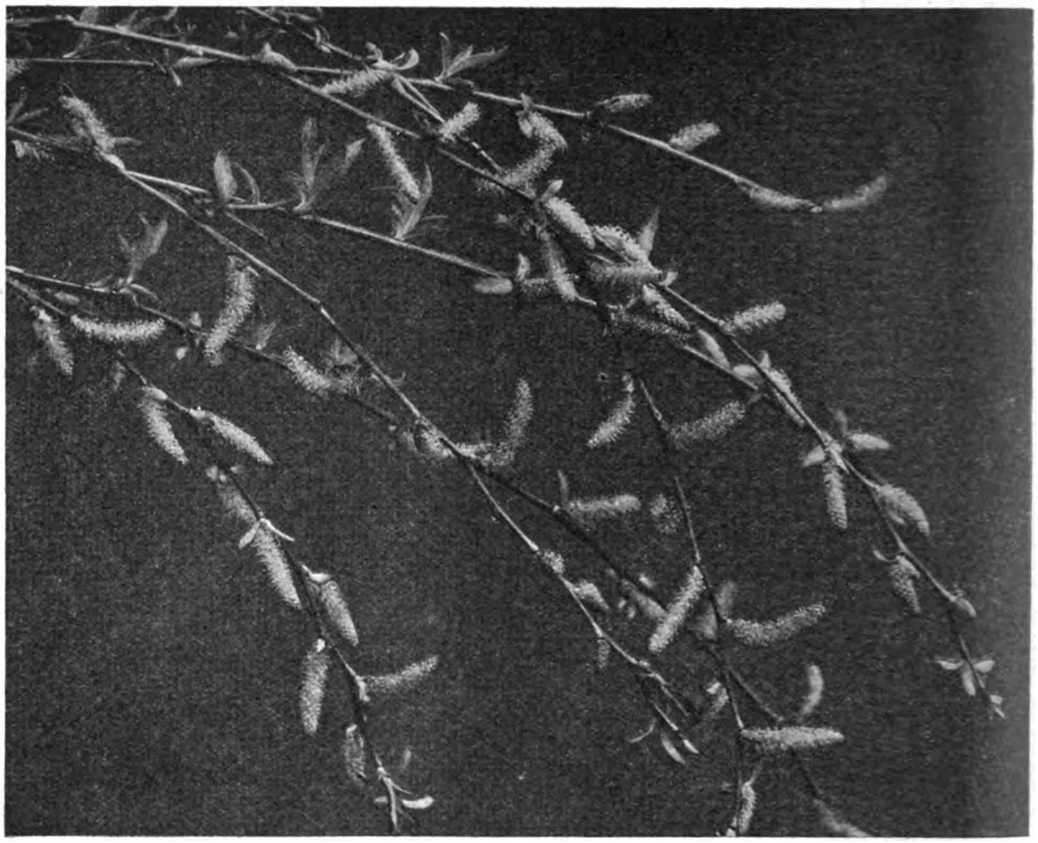


FIG. 325.—CATKINS OF SALIX JAPONICA VAR. LAVALLEI.

A new Chinese Willow, S. matsudana, introduced by the late Mr. W. Purdom from North China, promises to be a useful addition. It is allied to S. babylonica, but more upright in growth.

Among the shrubby Willows that are conspicuously attractive in foliage S. gracilistyla, a Japanese species, is very distinct, forming a spreading bush four to six feet high. S. rosmarinifolia, as the name suggests, has leaves resembling those of a Rosemary bush. S. incana is a distinct, wide-spreading bush with long, narrow leaves, dark green above, white beneath; S. Bockii is a dwarf Chinese Willow of spreading growth up to three feet or more in height, with dark green leaves. The showy catkins of this Willow, male and female, on different bushes, are produced just before the foliage falls in October and November. S. magnifica has remarkably distinct red shoots, large, purple-stalked leaves and showy male catkins, three inches to six inches or seven inches long, the female catkins even longer. This is one of the most remarkable new plants introduced by Mr. Wilson. "I have measured leaves ten inches long and five inches wide.

S. Caprea, the Goat Willow or "Palm," though the best known of all the Willows among the general public—the male catkins being associated with Palm Sunday—is not planted so freely as its beauty in spring merits.

The Kilmarnock Willow, S. Caprea var. pendula, is very effective grafted and grown as a weeping standard. One of the most distinct Willows when in flower is S. Medemii. It is allied to the Grey Willow, but is more vigorous in habit and flowers earlier; this year it was very conspicuous during the last week in January. S. Medemii is particularly interesting because the stamens and pistils are borne on the same catkins. S. Smithiana is a hybrid Willow with rich yellow male catkins up to two inches long. S. cinerea, the Grey Willow, is taller in growth than the Goat Willow, but with rather smaller leaves and showy, yellow male catkins.

S. japonica var. Lavallei is reputed to be a hybrid between S. babylonica and S. alba. As the illustration (Fig. 325) very well shows, it is of slender, branching habit, attractive in flower, and bears elegant male catkins. The illustration (Fig. 326) of an unnamed hybrid, S. Caprea × S. lanata, depicts the freedom with which the fluffy male catkins are produced. As a wide-spreading bush seven feet or eight feet high it is very showy.

The most valuable Willows to plant for the winter effect of the bark of the young twigs are S. vitellina, the Golden Willow; S. vitellina var. britzensis, the Cardinal Willow with red bark; and S. daphnoides, as well as the form pruinosa with purple or violet-coloured bloom on the young shoots. These Willows are most effective when planted in groups and pruned hard every spring for the purpose of obtaining a thicket of vigorous young shoots. *A. Osborn, Kew.*

TREES AND SHRUBS.

CRATAEGUS CARRIEREI.

AMONGST the collection of Crataegus at Kew, Crataegus Carrierei stands out prominently at the present time by reason of its bright fruits, which are still retained on the branches. For this reason alone the tree is well worthy of extended cultivation, for so many of the species of this and allied genera shed their fruits directly they are ripe or the birds dispose of them.

C. Carrierei is represented by a fine specimen at Kew, and Mr. W. J. Bean in *The Gardeners' Chronicle*, Vol. 21, 1897, p. 119, describes this species, which he regards as possibly a hybrid between C. C. Crus-Galli and C. tomentosa. Later, in *Trees and Shrubs Hardy in Great Britain*, the same writer records the suggestion that C. punctata and C. Crus-Galli are the parents of this charming tree which, in flower, fruit and foliage is very ornamental. The fruits are ovoid, from half-an-inch to three-quarters inch long, and are marked with dots much the same as those of C. punctata. They are said to possess a pleasant flavour. *J.*

ECCREMOCARPUS SCABER.

HARDY in a sheltered position, the Chilean Glory Flower is very attractive during the summer, when it produces its bright orange or orange-scarlet flowers with freedom. The plant flowers the same season from seeds sown in January or February. Some charming effects may be obtained with this species on walls or pergolas. It is very pleasing when used in juxtaposition to Plumbago capensis and is admirable for the cool conservatory or greenhouse. The racemes of nodding flowers are from four inches to six inches long. E. scaber was introduced from Chile in 1824.

LONICERA JAPONICA VAR. HALLIANA.

ONE of the finest of the Honeysuckles, this plant is remarkable for the length of its flowering period and for its rapid growth; the white flowers, changing to yellow with age, are produced throughout the summer and autumn, and are in delightful contrast to the light green foliage.

This Honeysuckle is of considerable value for a cold position, as it thrives in a northern aspect and will quickly furnish a considerable expanse of wall or trellis. It may almost be classed as a winter-flowering plant, for even on November 7 it had many flowers open, and this in spite of considerable frost. The plant is easily rooted from cuttings. *Ralph E. Arnold.*

ALPINE GARDEN.

HYPERICUM REPTANS.

BY common consent, Hypericum reptans has worthily been classed among the "hundred best plants," and has justified the claim made by some of its most ardent admirers that it is "the gem of the family." It is, truly, a charming little plant for the rock garden, and those who have grown it, but have, unhappily, lost it, are not long content without procuring this exquisite little St. John's Wort again. This species is so hardy that it is seldom that replacement is required, although in some districts where wet autumns and early winters are succeeded by severe frosts, H. reptans is badly crippled and even destroyed in exceptional seasons. It is advisable, therefore, to keep a few small plants in a frame, although it may generally be reckoned a hardy perennial. It is distinct from and greatly superior to H. repens, with which it is frequently confounded, and is a trailing plant with slender branches bearing pretty leaves and studded with charming yellow flowers of wonderful substance. Although trailing, it does not often cover a large space and may be cut back if desired, although the grower would generally prefer to remove another plant rather than lessen the size of this St. John's Wort. It is a real gem, with its neat leaves and wonderfully large yellow flowers.

H. reptans is excellent for a place on rock-work, where it can trail over a small stone, or in a wall garden where it may be planted in a crevice and allowed to hang down. It is easily propagated by cuttings or by seeds, which are freely produced, and occasionally I have observed self-sown seedlings spring up near established plants. This St. John's Wort thrives well in a light soil, consisting of loam, sand, and grit. It appears to grow well in either sun or shade.

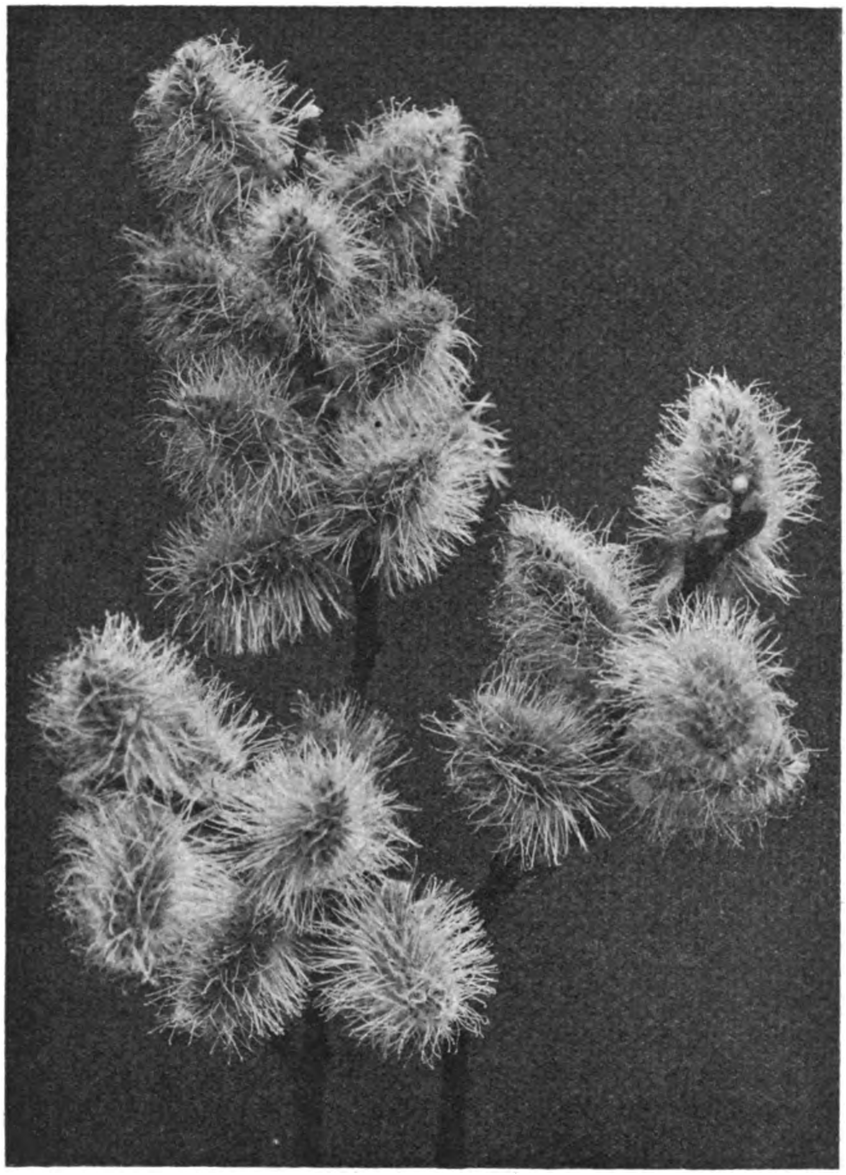


FIG. 326.—CATKINS OF SALIX CAPREA × S. LANATA.
(see p. 390).

VIOLA BOSNIACA.

WHILE the vast majority of gardeners cultivate the Viola of the florist, which has been enlarged and enriched over a long series of years, there are still some who delight in the Violets as they have come to us from their native haunts. These wildlings have not the large and brilliantly marked flowers of those we owe to the efforts of the hybridiser and seedling raiser, but they have numerous points of grace which give them a considerable warrant for inclusion in the garden.

Of such is V. bosniaca, a little species which is not common, but, by reason of its intrinsic loveliness is steadily finding its way into many rock gardens and borders. Its colour, alone, gives it a claim upon us, but it has other merits than its rose-mauve colouring and is a choice little Violet of much value and should not be overlooked when plants are being selected.

It is free-flowering, nearly as free as that of some of the bedding Violas, but with smaller leaves.

The plant seems to grow easily in any soil, seeds freely, and is increased by division or from cuttings. Plants or seeds may be secured and planted in spring. *S. Arnott.*

CHOICE ARENARIAS.

WHILST Arenaria montana grandiflora holds unrivalled supremacy among the Sandworts, and A. balearica is unique in its own way, and a jewel beyond price when it is in the right place, there are one or two other meritorious members of the genus A. Ledebouriana is one of these, an alpine that makes neat little clumps of a rich green, above which rise, about mid-summer, elegant sprays of white flowers. A. juniperina also forms compact cushions of prickly foliage, and sends up at the same time as the foregoing dainty, Gypsophylla-like flower stems which are starred with white over a long period.

Though the above species are easily cultivated under average rock-garden conditions. A. verna, our own charming native, is always short-lived in these gardens. Farrer writes of it as growing well in the neighbourhood of old lead mines, and suggests that a "diet of lead" is all it needs! The same authority is pardonably enthusiastic over the beauty of another indigenous species, A. gothica, but if this, again, is not everyone's plant, its distinction and simple loveliness are more than sufficient to merit it preferential treatment in the form of limestone scree. A. purpurascens is a delightful little plant which, unlike most others, prefers a cool root run and partial shade. In the later summer A. purpurascens adorns its tufts of glossy, dark-green foliage with rosy-lilac flowers, thus breaking clear away from the prevailing white of the race. A. graminifolia we have abandoned as worthless, but A. laricifolia of many lists, which is Alsine laricifolia, is a distinctly useful trailing plant for not too hot a place or westerly wall. This is a vigorous grower, making a close mat of vivid green, finely cut foliage, and producing comparatively large, white flowers through nearly all the season, *J. North Wales.*

CHRYSANTHEMUMS AT SOUTHEND.

The great pleasure townsfolk derive from their public parks and gardens has been exemplified in many boroughs during the past few weeks where the park's department has provided a display of Chrysanthemums under glass.

At Chalkwell Park, Westcliff, in the borough of Southend-on-Sea, a glasshouse, measuring fifty feet by twenty-five feet, is filled with a grand display of Chrysanthemums of all types. Over 1,500 plants contribute to make a most delightful pageant of flowers and they include some 500 plants of the large Japanese type. Many of the Japanese blooms are exceptionally fine, but Mr. A. Keeling, the Park's Superintendent, wisely considers that a more decorative effect is obtained by flowers of good average merit, than a few of extra large size, and the public, whilst appreciating the monster blooms, gets equal pleasure from the smaller decorative, single and incurved sorts.

The plants are arranged as a big central bank, reaching almost to the roof-glass and a border all round, some, six feet in width, is filled with the flowers, amongst which Cordylines, Acacias, Eucalyptus Globulus, Albizzia lophantha, Grevillea robusta, Palms and Ferns are used as foils.

It is interesting to learn from Mr. Keeling that yellow and white sorts are most popular with the public, and the old pink Rayonnante, with its rather uncommon effect, always finds admirers. Much interest is also taken in the pompons and the miniature-flowered yellow variety called The Baby, which has blooms only a quarter-inch to half-inch across.

Of the giant flowers the favourites with visitors are Louisa Pockett, W. Turner, Edith Cavell and Mrs. R. C. Pulling, and the choice is interesting seeing that these four varieties are amongst the best of the exhibition sorts. Other Japanese Chrysanehemums that have flowered especially well are Majestic, Rose Day, a pink incurved Japanese sort; Dr. J. M. Inglis, also with urved florets that are a rich wine-purple with silvery reverse; Mrs. Gilbert Drabble, Dawn of Day, a wide, flattish bloom of crimson lake colour with a silvery reverse; Thos. Lunt; J. Fraser, a rich yellow variety of "shaggy" appearance; Ellen Margerison, palest flesh pink; Queen Mary, Bob Pulling, Lord Lambourne, Mrs. Gibson, Daily Mail and Princess Mary.

Amongst the smaller decorative and single types are excellently flowered plants of Heston White, Cheshunt White, Julian Valet, one of the best white decoratives; Cranfordia, mahogany-red; King of the Plumes, yellow; Pink Pearl, a variety that should be included in all collections; Tom Wren, a fine white single variety; Sussex Yellow, also single, and one of great merit; Sandown Radiance, a beautiful single of deep red colouring; Countess of Egmont, pale bronze; Supreme, a dark red single; and Dawn of Day, the last a glorious reddish-bronze shade.

These are but a few of the sorts included in the collection which, it will be observed, is an up-to-date one.

On Sunday, the 9th ult., the visitors awaiting their turn of inspection formed a large queue and the collecting box of the local hospital has reflected their appreciation, for a sum of nearly £50 has been contributed voluntarily, for no charge is made for admission.

NOTICES OF BOOKS.

A Romance of the Rostrum.

Although a book not primarily written for the horticulturist, *A Romance of the Rostrum** is one which will appeal to those interested in horticultural records and the introductions of many plants which have found a place in our gardens. At one time it was the custom to distribute rare plants through an auctioneer, and Stevens' Auction Room, situated in King Street, in close proximity to Covent Garden Market, was the principal channel through which many interesting plants passed. The book is a story of the business life of Mr. Henry Stevens, who just recently completed his eighty-second year, and whose photograph was published, with an appreciation, in *The Gardeners' Chronicle* on February 23, 1924 (p. 100). Mr. Stevens has been a keen horticulturist from his childhood days, and consequently that part of the business which dealt with the sale of horticultural products had an especial interest to him, with the result that his services were keenly sought by the then leading nurserymen and plant collectors of the day. It must be remembered that Mr. Henry Stevens was called upon to sell many strange things, but no matter how diverse in character they were—whether mummies, books, ethnological subjects, Orchids, photographical appliances, in fact anything that existed the auction rooms always produced a buyer.

Thursday was the day set aside for the sale of Orchids, and these sales owed their inception to the famous botanical explorer, Mr. George Ure Skinner. Mr. Skinner collected chiefly in Guatemala, and on various occasions was present in the salerooms to give advice and information about the plants when his consignments were offered for sale. Roezl, Linden, Warsewicz, and Hugh Low were other collectors who furnished consignments, and many interesting stories are recorded concerning the sale of these rare tropical plants.

One story concerns a specimen of Odontoglossum Pescatorei which was bought the previous year as a small oddment for four shillings, and which Mr. Stevens had the pleasure of reselling to Baron Schröder for £173 5s. A weakly specimen of Odontoglosssum vexillarium superbum, bought for half-a-crown, was nursed back to health by a grower and sold again, when it realised £72, the purchaser in this case being the late Sir Trevor Lawrence.

Messrs. Sanders, of St. Albans, Messrs. Low, of Clapton, and Messrs. Veitch, of Chelsea, all had their band of collectors, and importations were sold in these famous auction rooms. It is recorded that over £2,000 was taken for plants of Cattleya Sanderiana, and a single specimen of Aërides Lawrenceiae sold for no less a sum than two hundred and thirty guineas.

These stories are of days when there was great competition for rare Orchids, but to Mr. Stevens and his confreres is due the acknowledgment that they did much to popularise these flowers. Excitement and keen buying continued until forty or so years ago when, in-so-far as Stevens' Auction Rooms were concerned, the Orchid sales gradually dwindled and came to an end.

In bulbs and plants Mr. Stevens had many dealings and a chapter concerning these finds a place in the book. The products of Ghent nurseries, Azaleas and Camellias, etc., were among the first plants he sold. Then Dutch bulbs came to the fore and three days a week were, throughout the season, given up to sales of Tulips, Daffodils, Hyacinths and other bulbs. In the early sixties Lilium auratum was a particular treasure and at one sale consisting only of bulbs of this Lily, £740 was realised. Wellingtonia gigantea seeds were also dealt with and the first consignment sold at the rate of one hundred and twenty-five guineas an ounce! Tubers of Begonia Rex, which were not recognised as such at the time of the sale, produced vast sums of money for the buyer—a Belgian horticulturist—who vegetatively propagated the plant from its leaves.

These are but a few of the items gleaned from a book that from beginning to end is full of interesting matter and reflects great credit upon the compiler, Mr. E. G. Allingham. The book is illustrated from actual specimens of many rarities which have passed through Mr. H. Stevens' hands, and collectors generally will feel grateful to the author in placing the many interesting transactions on record.

HARDY FRUIT GARDEN.

LATE PLUMS.

Late varieties of Plums may be grown on shallow soils with every prospect of success, on double or triple cordons. The soil must contain a liberal quantity of lime and phosphates to assist in the formation of the stones, also as an aid to increased growth and fruitfulness.

Copious supplies of water must be given the roots of trees trained on walls and, during the fruiting season, attention must be paid to summer pruning and training in the fruiting wood. The trees will fruit well in north-west, west, and east aspects. The following are amongst the best varieties:—Late Transparent, a large, round, greenish-yellow fruit of fine flavour. This variety possesses every good point a dessert Plum should have. It will succeed on a wall in cordon or fan shape. The fruits are ripe at the end of September and they are most freely produced when the tree is planted with other sorts adjacent to it.

President is a very large, dark purple culinary sort, coming into use in October, and the fruits may be retained quite fresh until the end of that month. This is a free stone Plum and may be recommended to follow Monarch. It is a variety worthy of extended cultivation. Primate is another of Messrs. Rivers and Sons' introductions and is one of the very best late Plums in cultivation, extending its season until the end of October. The fruits are reddish-purple, very large, juicy, and with free stones. This variety will succeed in most gardens and most aspects.

Orpington Prolific is an oval, greenish-yellow Plum, with a good Gage flavour. The tree is very prolific and useful for all systems of training. It is the latest of all Gage Plums and is in great request during the early game shooting season. Planted in proximity to Monarch a crop will usually be ensured.

---

* *A Romance of The Rostrum.* Compiled by E. G. Allingham. H. F. and G. Witherby, 326, High Holborn, W.C. Price 2s. net.

Archduke is a large, oval, very dark purple cooking variety, with golden-yellow flesh. It has fresh flavour and a free stone. The season of ripening is the end of September. The tree is a sure cropper and a variety of merit. Coe's Violet Gage is a sport from Coe's Golden Drop and has the good qualities of this ever-in-demand Plum. Kept in small muslin bags this Plum will hang on the tree until November and is then of much sweetness. This sort requires an affinity as a polliniser and probably any variety flowering at the same time would suffice. *Pomona.*

VEGETABLE GARDEN.

OKRA OR GOMBO.

Hibiscus esculentus. Linn.

This interesting and useful plant is not so often found in English vegetable gardens as it deserves to be, particularly in the south and south-west parts of the country. Our French and Italian neighbours esteem it very highly, and British travellers in those counties who have ventured to try this strange dish regret that they are practically unable to obtain it in their own country. Those who are fortunate enough to visit America, particularly the Southern States, are loud in their praises of this delicious dish, and having once partaken of a bowl of Chicken Gombo prepared by a capable southern negro cook, declare that it is the very best thing in the food line that American culinary efforts can produce.

Let it be observed at the outset that until market growers utilise some of their empty frames for its culture, or the French gardens are numerous enough to guarantee a constant supply of pods in the season, this is not recommended as a poor man's dish, but where a hot-bed is available to raise the plants, and frames to keep them growing until all danger from frost is over, they may be grown with comparative ease in sheltered gardens with a light, sandy soil, in the southern parts of England and Ireland and the Channel Islands.

The plant is quoted by Miller, 1759, under the name given above by Linnaeus, which, Miller states, is the Ketmia Brasiliensis, folio ficus, fructu pyramidato sulcato named in Tournefort, Inst., R.H. 100 (1716?), and describes it as follows:—"This sort is very common in the West Indies, where the inhabitants cultivate it for the Pods or Seed Vessels, which they gather green to put in their Soups, these having soft viscous juice, add a Thicknesse to their Soups, and renders them very palatable. It rises with a soft herbaceous Stalk, three feet high . . . . the flowers are produced from the wings of the Stalk, they are of a pale sulphur color with dark purple bottoms, and of very short duration, opening in the morning with the rising Sun, but are faded long before Noon in warm weather. These are succeeded by Capsules of very different Forms in the different varieties; in some the Capsules are not thicker than a Man's Finger, and five or six Inches long; in others they are very thick, and not more than two or three Inches long; in some plants they grow erect, in others they are rather inclined; and these varieties are constant."

The plant is an annual and is killed by frost.

As stated by Miller, it is the pods, or seed vessels which are eaten, and these should be freshly gathered while they are young and tender, before they develop hard, woody fibre. Under favourable conditions the fruits are very freely produced.

In addition to their use in soups the pods may also be used as a table vegetable after they are fried in oil or butter. The vegetable mucilage they contain is pleasant to the taste, highly nutritious, and very digestible.

There are several varieties, of which the most useful are:—Dwarf Prolific, an early variety which yields a tremendous crop of rather short, thick, and very fleshy pods, and the Long-Fruited Green, which produces pods of superior quality, six inches to eight inches long. The ripe seeds may be parched and used as a substitute for Coffee, the infusion being equal to that obtained from Chicory or Sweet Acorns. *S. B. Dicks.*

ONIONS FOR AUTUMN SOWING.

The highly informative article on this subject which appeared in your issue of November 22, should be read carefully by every seedsman and market grower.

Mr. S. B. Dicks, however, mentions that gardeners—I suppose he means market gardeners—sow about sixty pounds of White Lisbon seeds to the acre, so that two years ago when the price was eight shillings per pound, that rate of sowing would cost £24 per acre! In the autumn of 1923 I sowed a few acres at the rate of thirty-two pounds per acre, and even so the crop was far too thick, and sixteen pounds of seeds would have been sufficient. The rows were nine inches apart, as closer sowing makes the work of hoeing and weeding very difficult. The growth from these seeds was, however, exceptional. It has often happened in the past that thirty-five pounds per acre was about right as regards a paying crop. Where sown too thickly and too early the plants may run to seed or become quite withered unless they are disposed of quickly, whereas in the case of a thin crop the tops grow strongly and thickly, and the Onions develop to a fairly good size, when they are highly prized by housewives for use along with early Potatos and they sell readily.

The thickly-sown crops often have to be disposed of at a great sacrifice, whereas the thinly sown ones may stand for weeks longer. A top dressing of nitrate of soda improves the appearance of these early Onions to a remarkable extent. Market gardeners hereabouts now sow White Lisbon Onion moderately thickly in spring in preference to others, for selling green, as the tops stand up better than is the case with any other variety. Foreign-grown Onions of all kinds are dumped in our markets so that growers do not run the risk of drying their bulbs.

The Onions known as Egyptians, which begin to come from Levantine ports in April, are not mentioned by Mr. Dicks. To all appearance they are similar to Potato Onions or Shallots, and I presume they are split up for transplanting. The huge cargoes which arrive must cost very little to produce, as wholesale prices are often not more than 5s. or 6s. per cwt. *James N. Scarlett, Inveresk, Midlothian.*

A POTATO COMPETITION.

The Ascot and District Horticultural Society organised a Potato competition for the members, a prize being offered for the largest crop grown from a single tuber of about three ounces in weight. The Society made the condition that not more than twelve roots were to be grown from the single tuber.

The first prize, a Gold Medal, was won by Mr. J. Irvin, gardener to A. W. C. Chaplin, Esq., Lynwood, Sunninghill, the total weight of his crop being 124 lbs.; the second prize was won by Mr. Moore, Ascot, with a weight of 58 lbs. A prize was also offered for the correct name of the variety and eight members were successful in naming it, the sort being Crusader. The prize of a spade presented by Mr. F. E. Browne, High Street, Ascot, was won, after cutting a pack of cards, by Mr. Moore.

HOME CORRESPONDENCE.

An Experience with Phylloxera.—Those who remember when the Phylloxera first made its appearance in British vineries will not readily forget the scare its appearance gave to gardeners. It appeared about the time I took charge of The Hendre Gardens, and I remember when calling upon Mr. Roberts at Gunnersbury Park Gardens he showed me the effects of this pest upon the roots and leaves of the vines there, which were effected by it. Upon examining them, I found many peculiarities similar to some that had been observed on The Hendre vines and which could not be accounted for. On reaching home I went to the vineries, unearthed some roots, and had no difficulty in finding the dreaded pest. Before informing my employer of this unfortunate state of things, I decided to be certain that I was not mistaken, and therefore forwarded some affected roots to Dr. Hogg, and Miss Ormerod, the then leading authority on insect pests. Her reply confirmed my worst fears. We therefore decided that all the vines in six vineries should be uprooted and new ones planted; and as no one could give advice from experience, we considered it advisable to act thoroughly in the matter and run no risk of a repetition of the evil. We accordingly uprooted the vines and burned them together with their roots, carted the soil from the borders to a distant part of the kitchen garden and removed all the drainage. The walls of the vinery borders were coated with cement, in case some of the insects might remain on roots that had penetrated the brick work. When preparing for replanting, the borders were concreted, drained in the usual way, and a section of each border made. Young vines from a reliable source were procured, but in order as far as possible to avoid a recurrence of the trouble, we took the precaution previous to planting them to submerge their pots for a considerable time in a water tank, as it was the general opinion that the Phylloxera could be drowned. The subsequent behaviour of the vines proved we had entirely eradicated the Phylloxera. Some readers may consider we incurred unnecessary trouble and expense in dealing with the matter, but it must not be forgotten that the undertaking was quite new to general practise; we had the satisfaction of feeling that we had done all we were able to do, and, moreover, our efforts were ultimately successful. *Thomas Coomber, V.M.H.*

Quercus Turneri.—In my note on this pretty tree (p. 353) it is stated that it retains its verdure "till it has to surrender to the imperious winds of winter." I meant to write "winds of March," for the chief merit of this Oak consists in its retaining its bright green leaves throughout the winter. It is only short of being a true evergreen because, unlike one of its parents, the Holm Oak, it sheds its foliage a month or two before the young leaves appear. *Herbert Maxwell, Monreith.*

Big-Bud Mite attacking Hazels.—More than two years ago, whilst discussing the big-bud pest of the Black Currant with a gardener, my attention was directed to some Hazel bushes close by which also showed abnormally swollen buds. It was suggested that they were affected with the same mite, and I accordingly took an infested branch and fixed it in an isolated Black Currant bush which had not previously shown any signs of infection. It is interesting to record that the bush has developed big-bud this season. I have just examined the buds under the microscope and find them to be full of mites; there is no other Black Currants anywhere near, and those I possess are all quite free from the pest. I should like to know if the Hazel has ever been recorded before as a host plant for the big-bud mite. *W. E. Harper.*

Epipogon Epipogium (L) Druce.—I am able to give additional particulars about this very rare Orchid which was found in Oxfordshire last summer. In the account of it which I contributed to your pages (see p. 159), I stated that there was 'probably a specimen in the Cambridge Herbarium from the wood at Ludlow. That is not the case. There is a specimen in the Babington Herbarium, but it is more interesting since it is the original specimen found at Tedstone Delamere, which was sent to the Rev. W. R. Crotch for identification and on which he sent a note to *The Phytologist*. From him it passed to Professor Babington. Therefore there appear to be only three British specimens known, two of them being collected by myself. I have therefore given my Ludlow specimen to the National Herbarium at Cromwell Road and retain the Oxfordshire specimen in my own British Herbarium. Of course, there may be others in existence, and, if so, this note may induce the owners to record them. In the Babington Herbarium there is a painting of the Ludlow plant dated August, 1881. There it states that Miss Peile had failed to get it to grow in her garden. It was seen a second time by a retired chemist who thought it was an abnormal Bee Orchid. The plant was found close to the road going through the wood. There I vainly sought for it on several occasions. *G. Claridge Druce.*

Frost and Pruning Cuts.—*W. T.*, p. 360, asks for experience as to the effect of pruning fruit trees during frosty weather. I have never been able to trace the slightest injury, and always continue to prune in any weather which the workers can manage to put up with. This refers to Plums as well as Apples. I cannot see what difference there can be in pruning during frost and pruning during a mild period which may be immediately followed by frost. My experience has been gained in southern England; so it is possible that northern growers can tell a different story. *Market Grower.*

SOCIETIES.

HULL CHRYSANTHEMUM.

Nov. 19 and 20.—The Hull and East Riding Chrysanthemum Society, which revived ts shows last year, held its annual exhibition in the City Hall and Art Gallery, Hull.

The City Hall itself was beautifully decorated. Mirror groups were arranged at the base of each pillar, and groups were charmingly disposed here and there to great advantage, as well as most effectively, in front of the huge platform and at the opposite end of the Hall. To Mr. H. D. Witty, Superintendent of Public Parks, Hull, belongs much credit for original ideas in regard to grouping Chrysanthemum plants, etc. Down the centre of the City Hall were two long tables, arranged parallel, on which were shown cut blooms of the Japanese sections. These cut blooms were shown on boards of larger dimensions than we have seen before. It was an experiment and the judges were asked to express their views in regard thereto. These exhibition boards for Japanese blooms were of the following dimensions:—for twelve blooms, thirty-six inches back to front, seven inches high at the back, three inches in front, and forty-eight inches wide; two "twelve" boards were used for twenty-four blooms. These measurements allowed a space of twelve inches for each bloom. The new method must be regarded as one of the best ever provided for the display of large exhibition flowers. The art gallery was utilised for displaying numerous other cut bloom classes, table decorations, etc., and fruit, whilst other portions of the two buildings were crowded with excellent displays of vegetables, in which competitions the keenest interest was evinced.

The Lord Mayor of Hull, Sheriffs, and Members of the Corporation, were present at the opening of the Show, under the chairmanship of the Rt. Hon. T. R. Ferens, P.C., J.P. We were pleased to note the presence of Mr. R. Falconer Jameson, the veteran grower and enthusiast, looking hale and hearty. Much credit is due to Mr. Jas. White and Mr. E. Mennell for the excellent arrangements of the exhibition.

Open Classes.

For a group of Chrysanthemums a capital display gained first prize for Mr. B. Gray, gardener to R. H. Micks, Esq., Hotham House, Brough, the second prize being awarded to G. Stamp, Esq., Aulsby Road, Hull.

No fewer than six exhibitors competed in the class for a mirror group of Chrysanthemums, miscellaneous flowers and foliage, arranged on a ground space not exceeding twelve square feet. The mirror, about three feet wide by seven feet high, with a shelf seven inches wide and five inches below the top, was provided for each exhibitor. The first prize was deservedly awarded to Mr. A. C. Storey, gardener to the Rt. Hon. T. R. Ferens, Holderness House, Hull, for a very artistic and beautiful array of single Chrysanthemums and other choice flowers and foliage, daintily finished; second, Mr. G. Wilson, gardener to A. D. Hall-Watt, Esq., Bishop Burton Hall, Benerley, and third, Mr. H. Barratt, gardener to Capt. J. H. Broadley, Welton House, Brough.

The four competitors in the class for twenty-four Japanese blooms in eighteen distinct varieties, made a grand display on the large boards previously referred to. The blooms were superbly fine throughout, the first and second prize winners running closely together. Leading honours were secured by Mr. W. J. Earl, gardener to Mrs. Arthur Wilson, Tranby Croft, Hull. His blooms were very large, of splendid quality, and beautifully finished, in fact some of the finest we have seen during the present season. The more noteworthy varieties were Shirley Golden (2), Louisa Pockett, W. Rigby, Mrs. G. Drabble, Mrs. R. C. Pulling (superb), Mr. J. Belver, Princess Mary, Mrs. G. C. Kelly, Gen. Petain, Mrs. Algernon Davis (phenomenal), Golden Champion, Edith Cavell (grand colour), G. Jolliffe, and Masterpiece. Second prize was awarded to Mr. F. J. Fleming, gardener to T. W. G. Hewitt, Esq., Wellsby Old Hall, Grimsby, who had Louisa Pockett, Queen Mary, Mrs. Algernon Davis, Mrs. R. C. Pulling, W. Rigby, and Masterpiece, in good condition. The third prize was won by Mr. G. Wilson.

There were only two entries in the class for six vases of three incurved blooms, in six varieties. Mr. R. Jones, gardener to J. Armitage Esq., Clova, Harlow Oval, Harrogate, was an easy first with good blooms of Mrs. P. A. Wiseman, Mrs. F. Ashworth, Calypso and Romance; second Mr. W. Espin, West Acridge, Barton. The same order was observed in the awards for two vases of incurved blooms in six distinct varieties.

For one vase of three blooms of a yellow Japanese variety, Mr. G. B. Burrows, gardener to Mrs. Bennett, Westlands, Grimsby, was an easy first prize-winner, with magnificent blooms of Princess Mary. With the same variety, Mr. F. J. Fleming was second and Mr. W. J. Earl, third. In a similar class for three blooms of a white Japanese variety, Mr. Burrows was again first with ideal blooms of Queen Mary, and with the same variety Mr. Fleming was also again second and Mr. G. Wilson, third. For one vase of three blooms of a pink Japanese variety, Mr. Fleming was first with fine blooms of Mrs. B. Carpenter; Mr. Wilson was placed second and Mr. Armitage, third.

In a similar class for three blooms of a bronze or other dark Japanese variety, Mr. Fleming led with grand blooms of Majestic, and with the same variety in fine form Mr. Burrows was placed second. Glorious blooms of Mrs. G. Monro secured third prize for Mr. Storey.

An interesting class was that for two vases of Japanese blooms in six varieties, three blooms in each vase, a grand series, deservedly won first prize for Mr. Fleming; blooms of Majestic, Mrs. B. Carpenter, and W. Rigby, were very handsome. Mr. Storey was second and Mr. Wilson, third.

We were very interested in the class for a table of disbudded or naturally grown Decorative Chrysanthemums, arranged for effect with any kind of natural foliage or grasses. Of the two competitors, Mr. M. Stather, Arlington Nursery, Cottingham, won first prize with the greatest ease. His flowers were all of good quality and they were charmingly displayed. Noteworthy sorts were Advance, Sunshine, Enid Elder, Mr. G. Dove, Mr. Buckbee, Wellington Wack, Framfield Orange, Nogoya, and Golden Glory. Mr. J. Irvine, gardener to W. H. Thickett, Esq., Bradley, Grimsby, won second prize. His stands, apparently, had no water in them, as the flowers soon hung their heads.

Superbly fine was the only exhibit in the class for a table of single varieties arranged for effect, one colour in each vase, with natural foliage, grasses or berries. This was put up by Mr. Stather and did him great credit. The flowers were large and of good colour and finish. Especially good were the blooms of Absolute, Sandown Radiance, Reg. Godfrey, A. B. Hudd, Robt. Collins, Floria, W. J. Godfrey, Mrs. W. E. Hutchinson, Nona, and Mrs. J. Bulmer. This was a fine effort.

The local classes were well contested and many very handsome exhibits were displayed therein.

The amateur division also was most creditable in regard to the quality of the exhibits.

The leading class in the decorative division, open to ladies only, was that for a dinner table, laid for six persons, Chrysanthemums only to be used with any kind of natural undyed foliage or grasses; the use of fruit was allowed. The first prize was easily won by Mrs. Edwin Robson, Sutton House, Sutton, with crimson-bronze single Chrysanthemums, arranged most artistically; the second prize was awarded to Mrs. E. G. Bilton, Kingstree House, Cottingham, for a pretty decoration, and third prize was secured by Mrs. E. Tinley Sissons, Northgate House, Cottingham.

Fruits and vegetables were extensively shown, the keenness in the competitions provided for allotment holders being especially noticeable. The Silver Challenge Trophy for eight distinct kinds of vegetables, to be competed for by Allotment Groups, Associations or Societies, resulted in the first prize being awarded to the Newland Horticultural Society; second, Cottingham District Allotment Association; and third, Beverley and District Association of Allotment Holders and Amateur Gardeners.

Trade displays were very fine and medals were awarded to most of them. Especially noteworthy were the exhibits of Messrs. Keith Luxford and Co., Harlow; Messrs. E. P. Dixon and Sons, Ltd., Hull, and Mrs. J. White, Hull, each of whom gained a Gold Medal. Messrs. D. Whitehouse, Hull, and Messrs. Linsley and Daughters, Hull, were awarded Silver Gilt Medals, and Silver Medals went to Messrs. Millar Bros., and Messrs. D. Toyne and Sons, both of Hull.

A Gold Medal was also awarded to Mr. Earl, gardener to Mrs. Arthur Wilson, Tranby Croft, Hull, for a very fine exhibit of fruit and winter-flowering Begonias.

ROYAL HORTICULTURAL

December 2.—Visitors to the ordinary fortnightly show, held at Vincent Square, Westminster, on the above date, had a pleasant surprise, for the hall was well filled with exhibits, and as the occasion was specially set aside to Cypripediums, these flowers were shown prominently in the groups of Orchids. Chrysanthemums, Carnations, and Begonias were also shown in good style, and a very fine Gold Medal display of Apples and Pears was contributed by The Hollesley Bay Labour Colony.

Orchid Committee.

Present : C. J. Lucas, Esq. (in the Chair), Messrs. Gurney Wilson (Secretary), Jas. O'Brien, Fred. J. Hanbury, R. Brooman-White, S. W. Flory, H. T. Pitt, Chas. H. Curtis, H. G. Alexander, G. F. Moore, Fred. K. Sander, J. Cypher, J. E. Shill, J. Cowan, A. McBean, Henry H. Smith, T. Armstrong, Richard G. Thwaites, and J. Wilson Potter.

First-Class Certificates.

Cypripedium Crusader Westonbirt variety (*Lucifer* × *Julian*) from Lt.-Col. Sir Geo. L. Holford, K.C.V.O. (gr. Mr. H. G. Alexander.) One of the finest of the Westonbirt Cypripediums, with an immense, vinous-purple dorsal sepal, with a white upper surface. The broad petals and lip are yellow, heavily tinged with chocolate-purple.

Cypripedium Doris Stanton (*Goliath* × *Pyramus*). From G. F. Moore, Esq., Bourton-on-the-Water (gr. Mr. Page). A noble hybrid with large, white dorsal sepal with sap-green base and heavy, purplish-claret blotched lines. The petals and lip are tinged with mahogany-red.

Cypripedium Cappamagna var. Fred. From Messrs. Sanders, St. Albans. A model flower, with broad, mauve-purple dorsal sepal that has a broad, white margin. The lip and petals are honey-yellow, tinged with chocolate-purple.

Brasso-Cattleya British Queen var. splendens (*B.-C. Digbyano-Mendelii* × *C. Lord Rothschild*). From Messrs. Cowan and Co., Southgate. A fine novelty of the dark class and one of the finest in shape. The sepals and petals are bright mauve. The broad lip is purple in front and yellow on a white ground in the centre.

Awards of Merit.

Odontonia Alexandra. From Messrs. Charlesworth and Co. A pretty form of their numerous Odontonia crosses with flowers of Odontoglossum form tinged with rose-pink and prettily marked, the front of the lip being white.

Odontonia Olivia. From Messrs. Charlesworth and Co. A well-shaped flower with sepals and petals rosy-mauve, with purplish markings and white front to the lip.

Cypripedium Our Princess. From Robert Paterson, Esq., Stamperland, Cathcart, Glasgow (gr. Mr. Merry). A showy and fine-formed Cypripedium with traces of C. insigne Harefield Hall, in the broad, heavily-blotched dorsal sepals with rich, purple spotting. The lip is honey-yellow, tinged with red-brown.

Cypripedium Mrs. Stephen Anderson (*bourtonense* × *Christopher*). From G. F. Moore, Esq. The upper sepal is white white with purple lines; the broad and well-displayed petals are tinged with red-brown.

Cypripedium Odin (*Antinous* × *Becktoniae*).—From Robert Paterson, Esq. A large, greenish-yellow Orchid with thin reddish lines and a fine white dorsal sepal.

Groups.

E. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), staged the premier exhibit, for which a Gold Medal was awarded, and a Silver-gilt Lindley Medal to his gardener for the magnificent culture and development of the grand Cypripediums raised at Chardwar. Varieties of C. Chrysostom, C. Christopher and their hybrids were prominent, some six or eight forms of each being shown with dorsal sepals four-and-a-half inches across. A batch of C. Argus × C. Fairrieanum was at one end of the group and at the other hybrids, chiefly with a yellow ground. Forms of C. Memoria Henry Elwes were among the darkest. Varieties of C. Memoria F. M. Ogilvie were superb, that named The Queen being probably the best of the section. Four forms of C. Gwen Hanmer, C. Madame Albert Février and good C. Maudiae and C. Prince Albert were also noted.

Robert Paterson, Esq., Cathcart, Glasgow, was awarded a Silver-gilt Banksian Medal for a very handsome group, and his gardener, Mr. Merry, a Bronze Lindley Medal for culture. The group contained over sixty fine Cypripediums, all splendidly grown. C. Stamperland and Our Princess are very handsome forms; C. Fantasia and C. Odin are both exceptionally distinct, whilst forms of C. Christopher, C. Pyramus and their hybrids were of equally fine quality.

H. T. Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood) was awarded a Silver-gilt Banksian Medal for a group in which hybrids and species were well represented. Miltonia William Pitt is a richly coloured form with a broad, white margin. Grand varieties of Cypripedium Memoria F. M. Ogilvie were included, also C. Nellie Pitt, a very pretty form, several plants of C. Royal George and C. Redvers Buller. Among the species was a plant of the rare Epidendrum laucheanum with a long spray of over sixty flowers.

A. J. Hollington, Esq., Forty Hill, Enfield, was awarded a Bronze Banksian Medal for a neat group in which good Cypripediums, Odontoglossums, Cattleyas and Laelio-Cattleyas were well displayed.

Sir A. Watson, Rathgar, Dollis Avenue, Finchley (gr. Mr. Bush) was awarded a Bronze Banksian Medal for a pretty group of good Odontoglossums, Odontiodas, Cypripediums, Lycastes, Oncidiums and Masdevallias.

Messrs. Sanders, St. Albans, gained a Silver-Gilt Banksian Medal for an extensive and well arranged group in which Cypripediums were specially fine, two forms of C. Cappamagna being among the best. Laelio-Cattleya Erica Sander var. Una is a fine pure white variety with dark claret lip.

Messrs. J. Cypher and Sons, Cheltenham, were awarded a Silver-Gilt Banksian Medal for a grand group of Cypripediums among which the noble C. Corsair and the broadly expanded C. Ballet Girl were conspicuous objects. C. Cyclops, one of the largest forms of C. Christopher, C. Goliath, C. Prince John and other standard forms were shown well. Interesting plants were a fine specimen of the white C. tovarensis and the true blush-tinted Laelia anceps Schröderae.

Messrs. J. and A. McBean, Cooksbridge, were awarded a Silver Banksian Medal for a pretty group, in which richly blotched Odontoglossums were finely shown. A representative selection of the other fine Orchids of the season was also staged.

Messrs. Cowan and Co., Southgate, were awarded a Silver Banksian Medal for a group with many fine Cypripediums, Cattleyas, and Brasso-Cattleyas, the best of the last-named being their new B.-C. British Queen var. splendens.

Messrs. Stuart Low and Co., Jarvisbrook, Sussex, were awarded a Silver Banksian Medal for a group, the central plant in which was a good specimen of their new Cymbidium Emerald (Lowio-grandiflorum × Tracyanum).

Other Exhibits.

Lt.-Col. Sir Geo. L. Holford (gr. Mr. H G. Alexander), showed the noble Cypripedium Minotaur and the massive white and yellow C. Moonlight.

Baron Sir H. Schröder, The Dell, Englefield Green (gr. Mr. J. E. Shill) showed several spikes of the large white Calanthe Harrissii with over thirty flowers on each.

Floral Committee.

Committee A.—*Present ;* Messrs. Henry B. May (in the Chair), H. J. Jones, J. M. Bridgeford, E. R. Janes, A. Turner, J. F. McLeod, Wm. Howe, M. C. Allwood, W. H. Page, Jas. B. Riding, W. B. Gingell, D. B. Crane, W. P. Thomson, and W. D. Cartwright (Secretary).

Committee B.—*Present :* Messrs. Gerald W. E. Loder (in the Chair), G. Reuthe, G. Yeld, F. G. Preston, A. Bedford, Geo. Harrow, E. H. Wilding, C. Williams, W. J. Bean, W. Cranfield, Reginald Cory, R. W. Trotter, James Hudson, and R. C. Notcutt.

Awards of Merit.

Rhamnus erythroxylon.—This species is a native of eastern Siberia and northern Mongolia, and possesses large bunches of fleshy, black fruits about the size of Black Currants, borne on slender stalks about half-an-inch long. The branches are spineless. Shown by the Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree.

Carnation Jeanette.—A very pretty perpetual flowering Carnation of rich carmine colour. The flower is very full, well formed and has fimbriated petals. The perfume is very pronounced for this time of year. Shown by Mr. C. Engelmann, Saffron Walden.

Carnation Doris Cox.—The colour of this perpetual-flowering Carnation is lilac-mauve, and the substance of the petals is excellent. Shown by Mr. G. Carpenter, West Hall Gardens, Byfleet.

Groups.

A magnificent display of Begonias, consisting mainly of the variety Glorie de Lorraine, was arranged by Major Pain (gr. Mr. F. Streeter), Wormley Bury, Broxbourne. The plants were exceptionally fine specimens—freely flowered and healthy—and the arrangement was very neat, the plants being allowed plenty of space, so that the specimens—some measuring four feet through—could be seen to advantage. The plants were raised on tripods wreathed in Box foliage, and a few specimens of the white variety Turnford Hall were placed towards the ends of the group. (Silver-Gilt Banksian Medal).

The largest group of Chrysanthemums was staged by Mr. Keith Luxford, who made a feature of the new single variety Mrs. J. Barrell, of rich orange-crimson colour with a distinct yellow zone around the centre of the flower. Sulphur Queen, Mr. Thos. W. Pockett, and Mrs. Arthur Brown were three good Japanese varieties shown in this extensive collection. (Silver-Gilt Banksian Medal). Mr. A. G. Vinten showed Chrysanthemums of excellent quality, which included the decorative varieties Balcombe Beauty, golden yellow; Mayfield Sunrise, pink, also single flowers of great beauty. (Silver Banksian Medal).

Mr. A. Young showed vases of the new yellow decorative variety Sunshine Willcox. Messrs. Cragg, Harrison and Cragg exhibited many fine market varieties. (Silver Banksian Medal).

A comprehensive display of coniferous shrubs was arranged as a floor group just inside the entrance by Mr. G. Reuthe, and among the rarer sorts were Pinus Lindleyana, with tremendous glaucous blue needles; P. Teocote, another Mexican species, with bright green, drooping needles; Abies bracteata, with shapely needles; Cedrus Libani Comte de Dion, a rare dwarf variety; the true Pinus Montezumae, with long needles borne in bunches of four and five; and Libocedrus Doniana, an Andean species with golden-green foliage. (Silver-Gilt Banksian Medal).

Messrs. Stuart Low and Co. showed Carnations, Cyclamen, Begonias, and miscellaneous greenhouse plants. (Silver-Gilt Banksian Medal).

Mr. C. Engelmann (Silver Banksian Medal), and Messrs. Allwood Bros. (Silver Banksian Medal), both contributed displays of perpetual-flowering Carnations. Cacti in a wide range of variety were shown by Mr. Sidney Smith, who also had a collection of quaint miniature Cactus gardens arranged along the front of the exhibit. (Silver Banksian Medal).

Mr. J. W. Forsyth had a bright group of his Caledonian strain of Cyclamen in scarlet, salmon, white, and pink colours; amongst the finest sorts were Silver-leaved Salmon, Giant White Wonder, a huge flower; Improved Brilliant, and Salmon King. (Silver Banksian Medal).

In conjunction with a display of Apples, Mr. H. Hemsley showed a number of alpines and shrubs growing in pots, and this exhibit was interesting on account of the rich and varied autumn foliage. (Bronze Banksian Medal).

Mr. W. Wells showed a collection of alpines, and the two large pans of Gentiana acaulis studded with a profusion of its blue flowers attracted attention. Violets in variety were staged by Mr. J. J. Kettle (Bronze Banksian Medal), and Mr. B. Pinney. Messrs. Reamsbottom showed St. Brigid Anemones; Mr. J. Klinkert displayed topiary specimens in Box; and Mr. Jean Graef had a group of Mistleto represented by specimens in pots, the same as those referred to in the note on p. 335.

Fruit and Vegetable Committee.

Present: Messrs. C. A. Nix (Chairman), Geo. F. Tinley, A. Bullock, S. B. Dicks, E. Neal, T. Pateman, E. Beckett, E. Laxton, A. N. Rawes, and W. H. Divers.

The Hollesley Bay Labour Colony staged a large exhibit of Apples in boxes and baskets as packed for market. This was certainly the finest exhibit of its kind displayed by an English grower at these meetings, for not only was the packing and grading all that could be desired, but the quality of the fruits was exceptionally high, and such sorts as Cox's Orange Pippin, King of the Pippins, and Charles Ross were very finely coloured. (Gold Medal).

The Hon. Vicary Gibbs, Aldenham House, Elstree (gr. Mr. E. Beckett), showed eight varieties of Grapes, each variety being represented by three or four bunches. The exhibit was not so fine as the one Mr. Beckett showed last year, doubtless due to the unfavourable season. The varieties were Lady Downes, Cooper's Black, Alicante, Muscat of Alexandria, Alnwick Seedling, Madresfield Court, Appley Towers, and Gros Moroc. (Silver Hogg Medal).

Mr. H. Hemsley, The Nurseries, Crawley, staged a collection of hardy fruit for which a Bronze Hogg Medal was recommended.

Messrs. Geo. Bunyard and Co. exhibited their usual collection of Apples representing some of the best in season, and on this occasion showed Barnack Beauty, Hormead Pearmain, Hambling's Seedling, Belle de Boskoop, Cox's Orange Pippin, Lane's Prince Albert, Baumann's Red Winter Reinette, and Ribston Pippin. They also showed Pears, Catillac and Comte de Paris. The latter is not very much grown in this country, but is worthy of planting. The fruits are large and somewhat like Pitmaston Duchess in shape, but a little pointed at the "eye" end like Glou Morceau and with a grey colouring reminiscent of Conference. The fruits exhibited were grown under glass and were ripe, so that it is obvious specimens grown in the open would be available for dessert purposes much later.

THE ORCHID CLUB.

At the meeting of the Orchid Club, held on November 14, there was a very fine assemblage of well-grown Orchids, Odontoglossums, Cypripediums, and interesting species being chiefly in evidence.

The increasing popularity of the meetings was indicated by the larger number of visitors present.

Premier Diplomas.

Odontoglossum aureatum (parentage uncertain, possibly a form of Mirum), from Dr. Craven Moore. The plant was the subject of much interest and attention by reason of its almost unique colouring. The flower is three inches across and the petals in shape are like those of a good O. eximium. The inner two-thirds of the petals are marked by solid blotches of cadmium yellow, the margin and outer third being pure white. The sepals are marked with chrome-yellow blotches slightly broken and margined with white. The lip is well-proportioned, flat, and marked with a chrome-yellow blotch margined with white. The plant, a small one, carried a full spike of ten flowers.

Cypripedium Memoria F. M. Ogilvie var. The Queen, from Dr. Craven Moore, a magnificent flower of one of the finest varieties of this well-known hybrid raised by Mr. G. F. Moore, the dorsal sepal being flushed with bright crimson.

Diploma of Merit.

Cypripedium Monialis var. Hilda Sharp, from Dr. Craven Moore, a beautiful and pleasing Niobe hybrid. The flower is well set and proportioned, the dorsal sepal, three inches transdiameter, is marked in its lower two-thirds by a bright crimson flush and a median, deeper crimson stripe, the margin being clear white. The petals and pouch are well proportioned and of crimson-mahogany colour, margined with yellow.

Groups.

B. J. Beckton, Esq. (gr. Mr. W. A. Stewart), exhibited a large and imposing group of Cypripediums, Calanthes, and interesting species.

A. T. Cussons, Esq. (gr. Mr. F. Cookson), was responsible for an interesting collection of some fifty plants, including a fine plant of Cymbidium Mastersii album.

Mrs. Fred Hardy staged a small collection of excellently cultivated and choice Odontoglossums and Odontiodas, all carrying full spikes.

Dr. Craven Moore (gr. Mr. C. Branch), exhibited a selection of choice Cypripediums, including Bianca Westonbirt var., Gwen Hanmer Chardwar var., Argo Fairrieanum Chardwar var., and Nirvana.

F. T. Paul, Esq., F.R.S., staged Cypripedium Greyi var. Claytonense and C. Frenchay.

John Jackson, Esq., showed a promising seedling Cypripedium and C. Caractacus.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

Friday, November 7.—Committee present: Messrs. J. Cypher (in the chair), A. Burns, A. Coningsby, D. A. Cowan, A. Keeling, J. McCartney, W. Thompson, and H. Arthur (Secretary).

First-Class Certificate.

Cypripedium Olympia (*Olympus* × *Leander*), —A fine large flower, the dorsal sepal having a broad margin of white with hairy brown and rosy-red spots at the base; the petals are broad. From P. Smith, Esq.

Awards of Merit.

Cypripedium Dr. Clayton (*Charlesworthii* × *Gurkha*) and *C. Dr. Clayton var. Purity.* From H. J. Bromilow, Esq,

Cypripedium The God Pan (*Hermes* × *Satyr*). From Mrs. Bruce and Miss Wrigley.

Groups.

Mrs. Bruce and Miss Wrigley, Bury, (gr. Mr. A. Burns), were awarded a Silver-Gilt Medal for a group in variety. A large Silver Medal was awarded to Messrs. J. Cypher and Sons, Cheltenham, for a miscellaneous group of Orchids.

Friday, November 21.—Committee present: The Rev. J. Crombleholme (in the chair), Messrs. H. Astley Bell, A. Coningsby, J. Cypher, J. Evans, W. Giles, A. Keeling, D. Losh Thorpe, F. K. Sander, and H. Arthur (Secretary).

Awards of Merit.

Cypripedium Madras (*Fairrieanum* × *Gaston Bultel* and *Cypripedium Eros* (*Queen Alexandra* × *Alcibiades illustrious*). From H. J. Bromilow, Esq.

Groups.

A. Hanmer, Esq. Buxton (gr. Mr. W. G. Giles), staged a group to which a Silver-Gilt Medal was awarded. A Silver Medal was awarded to Messrs. J. Cypher and Sons for their Orchid group. Messrs. Sanders, St. Albans, were awarded a Silver Medal for a group.

BRITISH FLORISTS' FEDERATION.

The Market Floral Committee of the B.F.F. met in Monro's Salerooms on the 17th inst., and Mr. D. Ingamells presided in the unavoidable absence of Mr. W. E. Wallace.

A Provisional *First-Class Certificate* was awarded to *Chrysanthemum Harmony,* a fine reflexing Japanese variety of rich, bronzy-red colouring. This was exhibited by Mr. H. Shoesmith, Guildford.

Some blooms of another variety, of large exhibition size, were submitted, but the Committee did not consider itself justified in making awards when exhibition blooms only were submitted, as its principal business is to consider the merits of flowers from a market point of view.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

The Rev. William Brews, Dumbarton, delivered a lecture on "Alpines" at a recent meeting of this Society. Before introducing the lecturer Mr. T. B. Kerr, who presided, made reference to the loss sustained by Mr. Bell, Chairman of Directors, by the death of his wife, and the Secretary was instructed to send a message of sympathy to Mr. Bell and his family.

Mr. Brews began his address with a few comments on the construction of rock gardens, and as indicating the advance that had been made, he made interesting comparison between modern and ancient rockeries. After describing the true Alpine plants, which were to be found in the little valleys of the Alps, he submitted a few rules for the guidance of those who contemplated the construction of a rock garden, and emphasised the importance of reproducing the conditions of nature. Essentials to success were a situation that was absolutely clear of overhanging trees; steep drainage and plenty of moisture, and a deep root-run. The last condition was necessary because of the long roots of certain plants, of which a species of Dianthus with roots measuring two-and-half feet was quoted as an illustration. A piece of ground twenty yards square would accommodate 400 distinct rock plants, but it should be on a slope with a southern aspect. Flint and quartzite were condemned as unsuitable materials, while limestone was recommended as the best, especially when there was no lime in the soil. In this connection the lecturer related an amusing experience. He could not get limestone when constructing his garden, but a ceiling in the Rectory came down and provided plenty of plaster and mortar at the right time. The lecturer considered that every rock gardener had reason to bless the person who invented short skirts, for they have saved the lives of many plants. Mr. Brews warned his hearers not to follow too accurately the advice from gardening books, as these were often written from the standpoint of a South of England grower: he added, if such books advised planting in partial shade, in the West of Scotland such plants should have full sunshine. The lecturer afterwards discussed suitable kinds of rock plants.

In the discussion which followed one speaker expressed surprise at not having seen a Sedum growing wild in Scotland, whereas in Northamptonshire they were quite plentiful. Mr. Brews, in reply, mentioned the interesting fact that three different Sedums grew luxuriously on the sunny side of Dumbarton Rock.

READING AND DISTRICT GARDENERS'.

THE fortnightly meeting of this Society was held in the Abbey Hall on the 10th ult., when there was an excellent attendance under the chairmanship of the President, Mr. Frank F. Moring, to hear a lecture on "The Perpetual-flowering Carnation, by Mr. A. Marshall, The Gardens, Bere Court, Pangbourne.

The lecturer dealt with his subject in a most practical and simple manner, giving minute details of his subject, from the preparation of the cuttings to the flowering plant.

In the competition for six large blooms of Chrysanthemums, Mr. F. J. GREEN, The Gardens, Aldermaston Court, was an easy first with exceptionally fine blooms of Louisa Pockett, Mrs. Algernon Davis, Princess Mary, and Mrs. R. C. Pulling. Mr. A. W. GOWER, The Gardens, Calcot Grange, was second, and Mr. H. WADE, The Gardens, Abbotsfield, Goring Heath, third. In the class restricted to under-gardeners for one bowl of Chrysanthemums, the work to be done in the room, there were only two entries, the first prize being awarded to Mr. H. LOADER, The Gardens, Aldermaston Court, and the second to Mr. T. WILKINS, New Road, Reading.

In the non-competitive section an Award of Merit was given to Mr. J. H. DOW, The Gardens, Calcot Park, for some fine blooms of Molly Godfrey Chrysanthemum, whilst the judges drew special attention to several vases of decorative Chrysanthemums shown by Mr. G. TOVEY, The Gardens, Leighton Park, Reading.

DERBYSHIRE HORTICULTURAL.

THE seventeenth exhibition of Chrysanthemums, fruits, and vegetables, of the Derbyshire Horticultural Association was held in the Royal Drill Hall, Derby, recently. The show was claimed to be the most successful ever held in the history of the Association, and the large hall, covering an area of 1,500 square yards, was well filled with exhibits; the entries, numbered three hundred and twenty, being an increase of twenty per cent. on the previous total.

One of the features of the show was a splendid group of miscellaneous foliage and flowering plants which was staged by Mrs. WALTER EVANS (gr. Mr. J. Maxfield), Darley Abbey. Winter-flowering Begonias, Chrysanthemums, and perpetual-flowering Carnations were shown in great numbers, and Ferns, Kentias, and shapely specimens of Cupressus macrocarpa lutea were also included in the display. The group was awarded a Gold Medal offered by H. T. Ann, Esq.

Chrysanthemums were, on the whole, very well shown, and competition was exceptionally keen in the principal classes. J. A. AITON, Esq. (gr. Mr. G. Neale), Duffield, secured the premier award in the open class for eighteen Japanese blooms, for which he received a Silver Cup, while in the class for eighteen Japanese and twenty-four single Chrysanthemums, G. H. STRUTT, Esq. (gr. Mr. J. Tannock), Belper, received the "Peed" Cup. The premier award for the best Japanese bloom was gained by J. A. AITON, Esq., who exhibited a magnificent specimen of the variety Victory. In the artisan section the principal class was for a semi-circular group of Chrysanthemums in pots arranged on a space five feet by four feet six inches, and the first prize, which carried with it the "Catt" cup was deservedly won by Mr. C. S. BUCK. In a similar class for a group arranged in a circle six feet in diameter, Mrs. W. EVANS was the principal prize-winner.

In the section devoted to fruits, the entries were heavy, and Apples and Pears were of first-rate quality. The "Smith" cup for a collection of fruit was awarded to LORD BELPER (gr. Mr. J. McCarthy), Derby, who showed Black Alicante and Muscat of Alexandria Grapes, Ringleader Melon, Doyenné du Comice Pears, and Charles Ross and Rival Apples. He also secured the first prize in the class for two bunches of Grapes.

Mrs. W. EVANS was first for dessert Apples and for Pears, and LADY VERNON (gr. Mr. J. Cowie), Sunbury Hall, Derby, led in the class for culinary Apples.

Col. SCOTT (gy. Mr. J. Woodward), Draycott, excelled in the open class for a collection of vegetables, and also won first prize for twelve Onions.

The Royal Horticultural Society's Bronze Medal was gained by Mrs. WALTER EVANS, who secured the highest number of points in the show. Honorary awards of Gold Medals were made to Messrs. BAKERS and Messrs. ROBINSON BROS., and Silver Medals to Messrs. VICKERS and Mr. W. LOCKIE for trade exhibits.

AYRSHIRE CHRYSANTHEMUM.

THE eighteenth annual exhibition of this Society was held at Ayr on Wednesday, November 19, when in the absence of the usual Autumn Flower Show, a representative display of pot plants, fruit, and vegetables was staged in addition to twenty-four classes devoted to Chrysanthemums. Compared with 1923, the number of entries showed an increase of one-hundred-and-ten.

Premier honours in the gardeners' class for two pots of Chrysanthemums were secured by Mr. R. J. CLARK, Ayr, who showed fine specimens of Vivian Morrell and H. W. Thorpe. The first-named variety was awarded the Glenfairn Cup and a special prize offered for the best plant in the show. Mr. CLARK was also successful in two single pot classes, but was beaten in another by Mr. J. W. KERR.

A massive cut bloom of Mrs. R. C. Pulling carried off the prize for the best bloom. It was grown by Mr. JAMES F. FULLASTON, Gleniffer, Ayr. who was also placed second in two other classes.

The Land of Burns Cup for four vases of Japanese varieties was awarded to Mr. T. CAMERON, Motherwell, and the following sorts were prominent in his dozen blooms: Sir E. Letchworth, Francis Rowe, Majestic, A. F. Miller, Mrs. R. C. Pulling, A. F. Tofield, Princess Mary, and Fred Green.

Mr. R. LIVINGSTON was successful in the single vase classes for yellow and white varieties, while GEORGE McCARTNEY, Monkton, was first for two vases of single Chrysanthemums, and Mr. T. W. KERR won a similar award for blooms that were not disbudded.

In the amateurs' section, Mr. R. LIVINGSTON was the principal prize winner. He won the Amateurs' Cup, which was offered for two vases containing three blooms each of Japanese varieties with first-class specimens of Mrs. M. Sargeant, Victory, and Majestic, and the same exhibitor was also placed first in the class for two specimens in pots with Charles Davis and Thelma Harkman.

Keen competition resulted in the class for one pot of incurved varieties of which H. W. Thorpe was exclusively staged, and Mr. ROBERT RAE, Ayr, secured the leading honour with a magnificent specimen. The same exhibitor shared with Mr. JAMES FULLARTON the chief awards in the cut flowers competition.

Pot plants were an interesting class. Roman Hyacinths were of superior merit, especially the first prize specimens staged by Mr. JOHN S. SMITH. The three pots of Begonia Gloire de Lorraine grown by Mr. GEO. McCARTHY, Orangefield House Gardens, Monkton, well deserved the premier award.

The material for the decorated dinner-table arranged for effect was not confined to Chrysanthemum blooms. Miss MOIR, Prestwick Nurseries, who won the first prize, selected scarlet Pelargoniums and Maidenhair Ferns. Other prize winners in this section were Messrs. R. J. CLARKE, J. L. DRINNAN, NORMAN JAMIE, DAVID ANDRIE, ROBERT F. HOWIE, and JAMES S. SMITH.

The principal honours in the vegetable section were gained by Mr. J. S. SMITH, Cumnor Hall Gardens, and Mr. A. C. SIMPSON, Dalmellington, while for fruit Mr. DAVID ANDRIE, Dunlop House Gardens, and Mr. ANDREW NOBLE, Crosshill, were the chief prize winners.

Mr. WILLIAM RAE, Heathfield Nursery, exhibited a large collection of Chrysanthemums. Other exhibits consisted of large specimens of Lyon Leek, "Pitts Improved," grown by Mr. J. HAY, Coilbank Gardens, Annbank, and Brussels Sprouts, "Dalkeith," grown by Mr. W. McLACHLAN, The Gardens, Towans, Prestwick.

NATIONAL CHRYSANTHEMUM.

THE Floral Committee of the National Chrysanthemum Society met at the R.H.S. Hall on November 17, when about twenty varieties of Chrysanthemums were presented for its consideration, and the following awards were made.

FIRST-CLASS CERTIFICATES.

Sportsman. —V.2.A.—An attractive and useful single variety with several rows of broad florets. The colour is red with rose shading in the centre. Shown by Mr. H. SHOESMITH, Guildford.

Challenger.—V.2.A.—A single variety of good form and with broad florets. The colour is rich chestnut-red.

Eleanor.—V.2.A.—A pretty orange-red single variety with a small yellow zone around the disc.

Envy.—V.2.A. (See Fig. 132, p. 365).—A handsome, large flowered, single variety with broad chestnut-red florets which are slightly pointed at the ends. There is also an attractive, but narrow, yellow zone around the disc. This and the two foregoing varieties were shown by Mr. J. BARRELL, Bridgwater.

Sheila.—V.2.A.—A large-flowered, single variety with slightly reflexing and broad florets. The colour is ruby-crimson. Shown by Messrs. KEITH LUXFORD AND CO.

The variety named Winter Pink, exhibited by Mr. H. SHOESMITH, the Committee desired to see again, while a Canary-yellow incurving Japanese variety named November Sun, exhibited by Messrs. W. WELLS AND CO., was considered to be identical with British Empire, consequently blooms were taken away for comparison with the latter variety. This is a very useful Chrysanthemum, and but for the doubt concerning its nomenclature, it would have received an award.

AT the meeting of the Floral Committee held at the Royal Horticultural Hall, on Monday, December 1, few novelties were submitted and only two awards made, as follow :—

FIRST-CLASS CERTIFICATES.

Sunshine Willcox.—V.I.C.—A small-flowered, decorative variety of rich golden-yellow colour. It is extremely free-flowering and capital in spray form. It is a golden-yellow sport from the well-known market variety named Miss Willcox, and is like it in all respects save colour. Shown by Mr. ARTHUR YOUNG, Oxted Nursery, Oxted

Walter Howe.—V.2.A.—A handsome, large-flowered single variety of deep velvety crimson colour. The florets are broad and a fully developed bloom has a diameter of six inches. Shown by Messrs. K. Luxford and Co., Harlow.

ROYAL HORTICULTURAL OF ABERDEEN.

The annual report of the directors of this Society refers to the Centenary Exhibition held in August, and opened by H.H. Princess Maud (Lady Maud Carnegie). Although the weather was not so good as had been hoped for, the financial results were not unsatisfactory, thanks to the generosity of well-known friends of the Society. The income for the year amounted to £616, and there was a deficit of £4 11s. 7d. In the beginning of the year, however, there had been carried through by the directors—in order to wipe off the adverse balance resulting from the previous year's show—a free gift, prize-drawing scheme restricted to the members of the Society, which proved a great success. A net sum of no less than £277 18s. 2d. was collected by this means, which, after deducting the adverse balance at the beginning of the season of £66 18s. 4d. and the small deficit on this year's exhibition of £4 11s. 7d., still leaves a balance of £206 8s. 3d. to the credit of the Society to carry forward to next year, irrespective, of course, of the £320 worth of legacies held by the Society for specific purposes. The Chairman, Colonel Gill, C.B., of Dalhebity, who has occupied the position for fourteen years, having expressed a wish to retire after seeing the Society through its centenary celebrations, has resigned office, and the directors have placed on record their cordial appreciation of his services to the Society during the period of his chairmanship. As his successor, the directors propose Sir Thomas Jaffrey, Edgehill, Milltimber, who has agreed to accept office.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

We have now pleasure in publishing a list of the principal donations to the Chairman's list at the Annual Festival Dinner of the Gardeners' Royal Benevolent Institution, a report of which was given in our last issue on page 381.

The late Sir Harry J. Veitch, £1,050; Major E. G. Monro's Covent Garden list, £1,000, including special donations from Major E. G., George and B. J. Monro, £500, and in response to the special appeal a further £50 from Mr. Geo. Monro; Mr. A. Watkins, £40; Mr. T. J. Poupart, £26 5s.; Mr. J. P. Rochford, 15 guineas; Messrs. Cobley, Kay and Co., 12 guineas; Mr. E. Stevens, Mr. A. Stevens, and Messrs. Lowe and Shawyer, 10 guineas each.

Mr. Leonard Sutton's (Chairman of Committee) list, £564; Mr. J. Collingridge's Covent Garden list, £400, including personal donation of 25 guineas, and Mr. J. Broome, 25 guineas; Mr. D. Ingamells and Son, 15 guineas, and Mr. P. Ladds, 15 guineas.

Royal Horticultural Society, 250 guineas; Messrs. Sutton and Sons, £210; Messrs. Waterer, Sons and Crisp, Ltd., 150 guineas; The Worshipful Company of Gardeners, £138; The Worcester Auxiliary, £120; Mr. J. Rochford, £120; Mr. Thomas Cook, £105; Messrs. Hurst and Son, £105; The Lord and Lady Bearsted, 100 guineas; Messrs. Rothschild, 100 guineas; Mr. W. Cuthbertson, 100 guineas; Mr. A. J. Wood's list, £100, including £52 10s. from Messrs. A. J. Wood and Son, and donations from Mr. W. J. Paulin, The Beeston Boiler Co., and Mr. Dunkels; Messrs. Harrods, £100; Mr. Peter C. M. Veitch, £65; Liverpool Auxiliary, 50 guineas; Mr. J. L. Kinnell, 50 guineas; Mr. C. P. Kinnell, 50 guineas; Messrs. E. Webb and Sons, 50 guineas; Mr. E. White, 50 guineas; Mr. C. Grahame-White, 50 guineas; Mr. W. J. Paulin, 50 guineas; Sir Jeremiah Colman, 50 guineas; Baron Schröder, 50 guineas; Lt.-Col. Sir Geo. Holford, 50 guineas; Lord Treowen, £50; Major Churcher, £50; Mr. R. F. Felton, £50; Mr. Whitpaine Nutting, £50; Mr. P. F. Bunyard, £50; Messrs. Fisher, Son and Sibray, £50; Mr. W. Honess, £50; Mr. R. W. Wallace, £50; Mr. J. Clayton, 40 guineas; Mr. W. E. Wallace, 40 guineas; Mr. W. Auton, £40; Mr. F. J. Chittenden, £37; Mr. H. G. Alexander, £35; Mr. E. Beckett, £33; Mr. Peter R. Barr, £31 10s. Messrs. G. Bunyard and Co., £31; Messrs. Wills and Segar, 25 guineas; Lord Vestey, 25 guineas; Mr. W. L. Corry, 25 guineas; Messrs. Barr and Sons, £25; Mr. C. H. Curtis, £25 (including 5 guineas from *The Gardeners' Chronicle*); Mr. W. J. Jefferies, 25 guineas; Mr. N. F. Barnes, 25 guineas; Sir Woodman Burbidge, £21; Mr. G. F. Johnson, £21; Mr. E. Mainwaring, £21; Sir Edward Stern, £20; Mr. E. Laxton, £20, and Mr. Bernard Crisp, 15 guineas.

An additional sum of £100 was promised from Covent Garden friends by Mr. J. Collingridge in response to the second appeal.

ANSWERS TO CORRESPONDENTS.

Brussel Sprouts attacked by Slugs: *B. S.* The punctures in the specimens of Brussel Sprouts have been caused by slugs, and the only course you can adopt is to carefully examine the plants and remove the pests by hand. It would also be advisable, in order to prevent further trouble, to take off all the lower "buttons" without delay, as these will provide a harbour for the slugs.

Diseased Arum Lilies: *F. G.* The Arum Lilies are affected with a bacterial rot due to Bacillus carotovorus, and the following method of control has given satisfactory results. After the plants have been allowed to "dry off" they are shaken out of the pots and all the soil removed. The corms should then be washed and all decayed parts removed with a sharp knife. The prepared corms are next steeped in a two per cent. solution of formaldehyde for four hours. Formaldehyde is sold at a forty per cent. strength, and a two per cent. solution is made by mixing one part to forty-nine parts of water. The roots should be potted immediately after treatment in disease-free soil and sterilised pots.

Ivory Dust: *W. R. B.* The ivory dust sent for inspection should prove of value for mixing with potting soil as a substitute for bone-meal.

Measurements of Tennis Court and Bowling Green: *L. A. V.* The dimensions of a full-sized tennis court are seventy-eight feet by thirty-six feet, but ample room must be allowed for side margins and a run-back beyond the base lines. A total breadth of fifty feet and a length of one hundred and two feet should give sufficient area for the game to be played in comfort. The correct measurement of a bowling-green is forty-two yards square, although the game is often played on lawns of much smaller dimensions and of rectangular shape.

Names of Fruits: *Gardener, Herts.* Pear Doyenné du Comice; Apple, King of Tompkin's County. *Kettering.* 1, Doyenné du Comice; 2, Doyenné Boussoch; 3, Gansel's Bergamot; Apple, Fearn's Pippin. *J. S.* 1, Stirling Castle; 2, Charles Ross; 3, Lord Lennox; 4, Golden Noble; 5, Emile d'Heyst. *T. S. H.* 1, Colmar d'Eté; 2, Beurré Bachelier. *S. E. A., Yorks.* 1, Marie Benoist; 2, Doyenné Boussoch; 3, Uvedale's St. Germain; 4, Fondante du Comice; 5, Beurré Capiaumont; 6, Marie Louise; 7, Brockworth Park. *P. S.* 1, Blenheim Pippin; 2, King of the Pippins; 3, Allington Pippin; 4, Wyken Pippin; 5, Pile's Russet. *Ride.* Herefordshire Pearmain. *R. N. G.* 1, Warner's King; 2, Hambledon Deux Ans; 3, Dean's Codlin. *C. E. F.* Napoleon Pear. *W. H.* Doyenné du Comice. *C. C. S.* A, American Mother; C and J, Sturmer Pippin; D, Yorkshire Beauty; E, Potts's Seedling; F, decayed; G, Scarlet Golden Pippin; H and L, Blenheim Pippin; I, Bramley's Seedling, K, White Nonpariel; M, Lord Burghley; N, Round Winter Nonesuch.

Rhododendron Leaves Infected with Insects: *R. R.* The Rhododendrons are attacked by an insect belonging to the Tingidae, probably by Stephanitis rhododendri. The Tingidae comprise a group of plant bugs remarkable for the reticulation of the upper surface of the wings. S. rhododendri has been exported from France, where it is said to have been imported with Rhododendrons from Holland. The eggs are laid in the leaves and hibernate in that position. About May they begin to hatch, and are found abundantly on the lower surface of the leaves by the month of June. At first, like all plant bugs, they are wingless, but gradually change after each month till the adult-winged forms appear. These lay eggs on the under surface during the latter part of July and during August, and thus complete the life cycle. There appears to be only one generation each year. The pest is best controlled by nicotine washes. The first spraying should be done towards the end of May, using the formula, soft soap 10 lbs., nicotine (95 to 100 per cent. purity) 6 ozs., water 100 gallons. A second spraying should follow three weeks later to destroy any larvae from eggs not previously hatched. Any reliable proprietary wash may be used instead, provided it contains enough killing agent.

Slugs: *W. C.* It is no easy matter to clear a garden of slugs, especially, as in your case, it is badly infested with the pest. The best method is to search for them and drop them in a strong insecticide as they are caught. Traps of such vegetables as Turnip, Carrot, and Potato may be placed at suitable spots, and these should be examined at intervals and the slugs destroyed. Another method is to place a board smeared with grease, grease-side downwards on the soil. The slugs will seek the harbour of the board and be attracted by the grease. Another plan is to scatter some bran on the soil and cover this with boards. There are several proprietary articles on the market, such as slugine and slugicide, which are stated to be efficacious in destroying these very destructive pests of the garden.

Communications Received.—J. S. C.—H. C. M.—H. J. B.—S. E. A. Yorks. thanks for 2s. 6d. for R.G.O.F. Box.—L. R.—H. F.—T. J. H.—R. J. W.—R. R. K.

GARDENING APPOINTMENTS.

Mr. A. Lampard, for the past five years Gardener and Bailiff to C. G. Montefiore, Esq., Coldeast, Sarisbury Green, Southampton, as Gardener to the same gentleman at Hopedene, Holmbury St. Mary's, Dorking, Surrey. (Thanks for 2s. 6d. for R.G.O.F. Box.—Eds.)

Mr. F. Marling, for four-and-a-half years Gardener to G. F. Jackson, Esq., Springfield House, Knowle, near Birmingham, as Gardener, to Mrs. H. Graham, Barford House, Warwick. (Thanks for 2s. for R.G.O.F. Box.—Eds.)

CATALOGUES RECEIVED.

J. W. Cole and Son, Peterborough.—Chrysanthemums-Pelargoniums, etc.

W. Drummond and Sons, Ltd., 57, Dawson Street Dublin.—Roses, Fruit Trees, Trees and Shrubs, etc.

THE

Gardeners' Chronicle

No. 1981—*SATURDAY, DECEMBER* 13, 1924

CONTENTS.

Alpine garden—
  Androsace sarmentosa 408
  Primula marginata ... 408
Annuals for greenhouse and conservatory decoration 404
Books, notices of—
  The Practical Book of Outdoor Flowers ... 410
Britten, the late Mr. James, legacies by ... 400
Brunfelsia latifolia ... 401
Canticles, garden-craft in the 406
Cultural memoranda—
  Perpetual-flowering Carnations 409
Development Commissioners, fourteenth report of the 399
Eucalyptus snout-beetle, the 400
Floral decorations in private establishments 404
Florists' flowers—
  Recently introduced Chrysanthemums ... 410
Fruit register—
  Apple Laxton's Superb 412
  Pear Comte de Paris 412
"Gardeners' Chronicle" seventy-five years ago 401
Gardeners of to-day, young 413
Hardy flower border—
  Podophyllum Emodii 404
  Senecio 404
Hazel, big-bud mite attacking, the... ... 413
Indoor plants—
  Begonia Gloire de Lorraine 400
Juvenile employment ... 399
Maiden, Mr. J. H. ... 400
Montrose Horticultural Society 399
Nursery notes—
  Chrysanthemums from seed 411
Obituary—
  Browne, W. 414
  Lynch, R. Irwin ... 414
  McAlpine, Prof. A. N. 414
Orchid notes and gleanings—
  Cypripedium White Star 405
Plants new or noteworthy—
  Euonymus yedoensis 408
Plants, protecting outdoor 401
Potato yield, the Scottish 399
Public parks and gardens 411
Rose garden—
  Decorative value of Rose hips 403
  Rose Ethel Chaplin ... 403
Societies—
  British Florists' Federation 414
  Royal Horticultural 413
  Smithfield Club ... 413
Southport, presentation at 399
Trees and shrubs—
  Clematis cuttings ... 408
  Clethra 408
  Desfontainea spinosa 408
Vegetable garden—
  Onion Excelsior ... 412
  The Egg Plant ... 412
Week's work, the ... 402
Welsh garden, notes from a 407

ILLUSTRATIONS.

Brunfelsia latifolia in the Sydney Botanic Gardens ... 401
Cypripedium Cappamagna var. Fred. Sander, 409; C. Crusader, Westonbirt variety 405
Euonymus yedoensis, fruiting shoot of 407
Maiden, Mr. J. H., portrait of 400
Rose Ethel Chaplin 403

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 39·1.

Actual Temperature—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 10, 10 a.m.: Bar. 30·5 temp. 41°. Weather, dense fog.

Fourteenth Report of the Development Commissioners.*

The present Report is prefaced by a statement of the problems presented by attempts to develop the country side. Reference is made to the relative success which has been achieved in this direction in France and to the great success achieved by Germany in pre-war days. It would be well worth the while of the Commissioners to make further inquiry in the case of Germany, for from what we have seen the post-war progress is even more remarkable than that which was achieved before the war. The problem of developing the country side in England, if it is ever to be settled, will not be solved until policy becomes consistent. The Development Commissioners do all that lies in their power to initiate and to help; but owing to mistaken ideas of economy the apparatus set up by the Ministry of Agriculture was discarded before it had time to prove its value. As the Development Commissioners point out, economy has also been responsible for the suspension of County Rural Industries Sub-Committees which were established so recently as 1920. And so we go on muddling. None has better means of judging whether industries can be made to flourish in rural districts than have the Development Commissioners. In their properly-cautious, prefatory remarks they lean to the view that the reformation of the country side is not impossible. An occasional blacksmith's van perambulating one of the counties, and odds and ends of effort, can accomplish nothing on a national scale. No problem confronting the State is greater than that of the redressing of the balance between town and country. All are agreed as to its importance, yet the amount of sustained, considered, and specifically-directed effort which is spent on attacking the problem would, perhaps, do credit to a parish council it does nothing but discredit to this nation. Let us hope that the wise and restrained words of the Development Commissioners will produce some effect in bringing home to all of us the magnitude and urgency of the need for amending the rural life of England. Turning from this distressing topic—which should be such an inspiring one—the Development Commissioners record the numerous activities of the Research Institutions to which they render financial assistance. No one who reads the account of the work which is being carried on in these numerous centres of research can doubt but that the Commissioners are making wise use of their powers, or that in the fullness of time the nation will reap the benefit of the wise and not illiberal provision of money for the fostering of agricultural research. Both the Commissioners and the Ministry of Agriculture may well take pride in the Institutions which they have brought into being or rendered of larger efficiency. That results flow but slowly from these Institutes will perturb no one who understands the difficulties of investigation into complex scientific and practical problems. But even to-day the policy of endowing agricultural research is bearing rich fruit, and in the years near at hand it will be yet more fully justified by its results.

"Gardeners' Chronicle" Almanack for 1925.—We shall publish in our issue of January 10 a *Gardeners' Chronicle* Almanack for the year 1925. In order to make it as useful as possible for reference we shall be obliged if Secretaries of Horticultural, Botanical, and Allied Societies, or any of our correspondents WILL SEND US IMMEDIATE INFORMATION OF ALL FIXTURES FOR THE ENSUING YEAR.

Scotch Potato Crop.—The statistics relating to the yield of agricultural produce in Scotland in 1924 show that the total yield of Potatos is estimated at 845,000 tons, representing an increase of 24,000 tons, or 2.9 per cent. This improvement, however, is not so satisfactory as the figures seem to indicate, as the larger output was entirely due to an increase of 1,305 acres in the area under the crop, for the yield of 6.1 tons per acre is practically the same as that obtained in 1923, and is 0.5 ton below the decennial average.

National Institute of Agricultural Botany.—The fifth annual Report of the Council of the Institute contains an interesting account of the work which has been carried on at Cambridge and Ormskirk during the past year. The account was supplemented in the address by the retiring chairman of Council, Sir Laurence Weaver, K.B.E., who took advantage of the occasion to trace the history and activity of the Institute, which owes its existence mainly to his foresight and energy. From the horticultural point of view the most notable achievement of the National Institute consists in the introduction of order into the nomenclature of Potato varieties by the publication of names of synonymous varieties, and in the prosecution and extension of the Wart disease trials and investigations. During the first year the Institute has undertaken to grow on and supply to the seed trade a large quantity of the Wheat Yeoman II, which previous trials had shown to be true to type and to yield flour of superior baking quality to that of the original Yeoman. In spite of difficulties of harvesting due to weather, several thousand quarters of Wheat have been delivered and a similar undertaking with respect to a pure line of another of Prof. Biffen's Wheats, Little Joss, is to form part of the programme of the Institute in the immediate future.

Competition for Design of Toptchider Park, Belgrade.—The time limit for sending in plans of the above park has been extended to February 28, 1925. Particulars of the prizes, etc., were published in our issue for November 15, p. 328, and further information may be obtained from the Serbian Minister of Agriculture, 62, Prote Mateie Ulitsa, Belgrade. Intending competitors are required, we understand, to deposit with the Minister a cheque, payable by a Belgrade Bank, for 300 dinars (about £1).

Juvenile Employment.—It is with great pleasure we learn that Mr. G. G. L. Du Cann, Secretary of the Horticultural Trades' Association, has been awarded the first prize of £100 offered by the Ministry of Labour's Advisory Committee on Juvenile Employmen for an essay on the best methods of dealing with juvenile unemployment in London.

Montrose Horticultural Society.—This Society celebrates its jubilee during the coming year and will mark the occasion by holding a special floral fête at Montrose on Friday and Saturday, August 21 and 22 next. The Earl of Strathmore has consented to become Hon. President of the Society during the year and the Committee proposes to have jubilee medals struck for awards to successful competitors and also to procure four jubilee cups to become the property of the competitor winning one or more of them three times, though not necessarily in consecutive years.

National Rose Society's Membership.—We understand from Mr. Courtney Page, Hon. Secretary of the National Rose Society, that the membership of the Society has increased by the addition of 2,053 persons during the present year.

Presentation at Southport.—Under the chairmanship of Mr. Councillor Clayton, the members of the Southport Show Committee and other members of the Corporation dined together at the Victoria Hotel, Southport, on December 2, and had as their guests, Mr. N. F. Barnes, of Eaton Hall Gardens, and Mr. Chas. H. Curtis, of *The Gardeners' Chronicle*. The function was arranged in honour of Mr. Alderman C. Aveling, formerly Mayor, and now Deputy Mayor, to whom Mr. Barnes and Mr. Curtis presented the illuminated, congratulatory address figured on p. 348 of our issue of November 22. Mr. Aveling expressed the pleasure it gave him to be the recipient of such an unique address, signed by the thirty judges who officiated at the Southport Floral Fête in August last, and he said that he felt the congratulations were due to Mr. Clayton and Mr. Alderman Wood and the other members of the Show Committee and not to him alone. With the other members of the Corporation he felt it a great honour that Mr. Barnes and Mr. Curtis had travelled such long distances to make the presentation, and through them he desired to thank the judges for their generous praise of Southport's efforts to make everyone connected with the Show as happy and satisfied as possible. It had been a great pleasure to him to meet so many of the leading horticulturists, all of whom he hoped to meet again at Southport. In accepting the address Mr. Aveling observed that the bulk of the work in connection with the successful Fête had been carried out by Mr. Clayton, Mr. Wood, and the members of the Show Committee, together with Mr. Clark, the Parks Superintendent, and Mr. Wolstenholm, the town's Publicity Manager, all of whom, however, readily acknowledged the great assistance they had received from all quarters, and especially from Mr. Curtis and Mr. Barnes, whose advice had been invaluable in the prepartion of the schedule and the general management of the Fête.

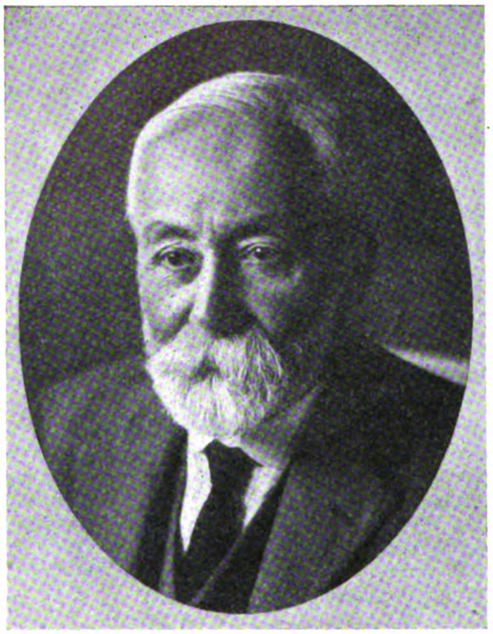
---

* His Majesty's Stationery Office, Kingsway, W.C.2. 1924. Price 4/-.

The Fruit Trade's Campaign.—The series of "fruit week's" organised by the Fruit Trade's Federation in the principal towns of Great Britain was inaugurated in Glasgow on Monday, December 8. This intensive scheme follows the lines of the American "Apple week," and its chief feature is a fruit painting competition for children under sixteen years of age, who, in order to obtain an entry form to compete for £150 in prize money, must purchase six pennyworth of fruit. Publicity is obtained by newspaper advertising and attractive posters displayed on hoardings and in the windows of the retail traders. It is claimed that practically every fruiterer in Scotland has joined the Federation.

Pyrus lagenarius.—Branches and fruits of Pyrus lagenarius were exhibited at the recent meeting of the Linnean Society. These had been grown by Mr. Harry White, of the Sunningdale Nurseries, Windlesham, who stated that the tree was raised from seed gathered by Mr. E. H. Wilson for the Arnold Arboretum, in 1910, at Tachien-lu, in the province of Sze-chuan, near the Tibet frontier, at a height of between five thousand and six thousand feet. The original bush is now nine feet high, and as much through, and is expected to reach twelve to eighteen feet in height. The flowers are red and white; the leaves large, persisting on the ends of the shoots during the winter and after a few years, the shrub fruits freely. The fruits become a beautiful, golden yellow by Christmas, and make a delicious jelly. This species appears to be quite hardy in the South of England and grows rapidly.

The Eucalyptus Snout-Beetle.— A very interesting paper* on the Eucalyptus Snout-beetle (Gonipterus scutellatus, Gyll) is contributed by Mr. C. W. Malby, M.Sc., Senior Entomologist, and it appears that this weevil is accountable for a great deal of damage amongst very many species of Eucalyptus, some of which, however, prove to be resistant to attack. Of those on which the pest has been recorded, E. viminalis, E. Globulus, and E. punctata are said to be the most susceptible, and usually the first sign of damage is noticeable by the brownish, scorched appearance of the young foliage. The twigs are attacked afterwards and the new growth often becomes entirely destroyed, resulting, after a period of a few years, in the tree becoming stunted and of a stag-horn appearance, with clusters of half-dead shoots along the framework of the branches. The Snout-beetle is undeniably a serious pest in South Africa, owing principally to its ravages in young plantations, and while contact insecticides are considered of little value for the destruction of the insect, it is believed that where practicable arsenate of lead, used either as a liquid or dust spray, will be effectual. The planting of belts of the specially susceptible species of Eucalyptus in plantations of other sorts and the systematic treatment of these belts is suggested as of possible value. It is thought that the beetles might be drawn to the belts and the plantation's other species be preserved from destructive attack.



MR. J. H. MAIDEN, F.R.S.

Mr. Joseph Henry Maiden.—A voyage undertaken in pursuit of health about forty-five years ago was destined to give to Australia one of its most distinguished botanists in the person of Mr. J. H. Maiden, who has recently retired under the age limit from the charge of the fine Botanic Gardens at Sydney. Mr. Maiden, whose portrait we now have the pleasure of presenting to our readers, is a Londoner by birth, having been born at St. John's Wood in 1859. He studied botany under Prof. R. Bentley and Prof. D. Oliver, but his university course had to be terminated owing to his delicate state of health. It was apparently not originally his intention to settle in Australia, but on reaching Sydney he liked it so much that he decided to make his home there, and he was only twenty-three years of age when he was appointed Curator and Secretary of the Technological Museum. His studies then, and indeed throughout his subsequent life, were largely directed to the investigation of the economic botanical resources of Australia, and in 1889 he published his excellent manual, *The Useful Native Plants of Australia*. In May, 1896, Mr. Maiden succeeded the late Mr. Charles Moore as Government Botanist of New South Wales and Director of the Botanic Gardens, Sydney. His success in the discharge of the duties connected with these important offices, and his very considerable and valuable contributions to our knowledge of the botany of Australia, have been recognised in various ways by scientific societies and institutions in his adopted country, in England and elsewhere. He has been a member of the Council of the Royal Society of New South Wales for over thirty years, and of that of the Linnean Society of New South Wales for thirty-five years, and has been President of both societies. As Honorary Secretary he has served the Australasian Association for the Advancement of Science for fourteen years. He has received the Mueller Memorial Medal, the Clarke Memorial Medal, awarded by the Royal Society of New South Wales, and the Medal of the Société d'Acclimatation of France. Mr. Maiden was elected a Fellow of the Linnean Society of London in 1889 and in 1915 was awarded its Gold Medal. In 1916 he was admitted into the Royal Society of London and in the same year was appointed to the Imperial Service Order. From time to time notices have appeared in our columns of parts of his colossal work, *A Critical Revision of the Genus Eucalyptus*. The first part of this fine quarto appeared in 1909 and now 62 parts, containing 255 plates, have been published. Mr. Maiden hopes to complete this great undertaking in about 70 parts, which will form seven volumes. His *Forest Flora of New South Wales*, begun in 1902, has recently been concluded with part 77. This contains 295 quarto plates and comprises eight volumes. Considerable as these works are, they by no means represent anything like the whole of Mr. Maiden's achievements as an author. His contributions to journals and the publications of scientific societies have been remarkably numerous and supply ample evidence of his extraordinary industry. Mr. Maiden now resides at Turramurra, near Sydney, and is succeeded in the offices he has relinquished by Dr. G. P. Darnell Smith, the Biologist of the New South Wales Department of Agriculture. We take this opportunity of offering to Mr. Maiden our cordial congratulations on the occasion of his retirement, and express the hope that it will bring him many years of happiness and further opportunities of using his rich store of knowledge of Australian botany in the interests of science, which he has already served so well.

"La Tribune Horticole."—It is pleasant news that the *La Tribune Horticole*, the Belgian horticultural journal which was conducted for so many years, and so ably, by M. Louis Gentil before the war, is to be re-established as from January 1, 1925. It is still to be under M. Gentil's editorship, and will appear weekly, on Saturdays; in connection with it there will also be published another paper, *La Tribune des Sociétés Horticoles*, to appear on the first and third Wednesday of each month. M. Gentil's present address is 2, Place Princesse Elisabeth, Brussels, but after January 1 the paper will be obtainable from 31, rue de la Démocratie, Anderlecht, Brussels. All admirers of Belgian horticultural enterprise will wish M. Gentil's renewed activities every possible success.

Legacies to Gardeners.—The late Mr. Edward Philips Thompson, of Pauls Moss, Whitchurch, Shropshire, who died on September 16 last, bequeathed a sum of £500 to his gardener, Mr. William Webster. The late Miss Sarah Margaret Eastwood, of Littleover Grange, Derby, who died on August 20 last, bequeathed the sum of £250 to her gardener, Mr. Charles Garvice.

Legacies by the late Mr. James Britten.—The late Mr. James Britten, of Boston Road, Brentford, whose death was referred to in *Gard. Chron.*, October 18, p. 275, left his interleaved copy of *The Biographical Index of British and Irish Botanists* and *Dictionary of English Plant Names*, with MS. Appendix, and his volume of drawings of British Orchids by Mary and Anne Giles, to the Botanical Department of the Natural History Museum, South Kensington. He left Dr. A. B. Rendle his stock of the *Journal of Botany*, and stock thereof at the publishers, provided that he shall promise in writing to carry on the publication of the *Journal*; and if his publication of the new edition of *Biographical Index of British and Irish Botanists* be not completed at his death, he left to Dr. Rendle all the material thereof and authorised his trustees to spend a sum not exceeding £225 in completing such publication under the editorship of Dr. Rendle, but if he shall not undertake the work, then he left this material to the Botanical Department of the Natural History Museum. All his art books, art magazines, and biographies of artists, and pictures not otherwise bequeathed, he left to any art school or public library to be selected by his executors. He left a life annuity of £75 to his housekeeper, Mary Ann Turner. The total value of Mr. Britten's estate was £31,980, with net personalty of £20,227.

---

* *Eucalyptus Snout-beetle, Journal of the Department of Agriculture.* Union of South Africa. Vol. IX., No. 5. November, 1924.

Brunfelsia latifolia.—We are indebted to Dr. Darrell-Smith for the photograph reproduced in Fig. 327, showing a magnificent specimen of Brunfelsia latifolia growing in a border in the Sydney Botanic Gardens. The fine plant is covered with flowers that are a most glorious shade of lavender-blue, with a white eye, and in addition they are deliciously fragrant. The species being a native of Brazil is not hardy in this country, but it makes an excellent greenhouse plant and forms a prominent feature in the greenhouse at Kew during the winter; there are also some fine plants of this Brunfelsia in the Temperate House at Kew. There is an excellent illustration of a flowering spray of this plant in *Bot. Mag.* t. 3907, under its synonym of Franciscea latifolia.

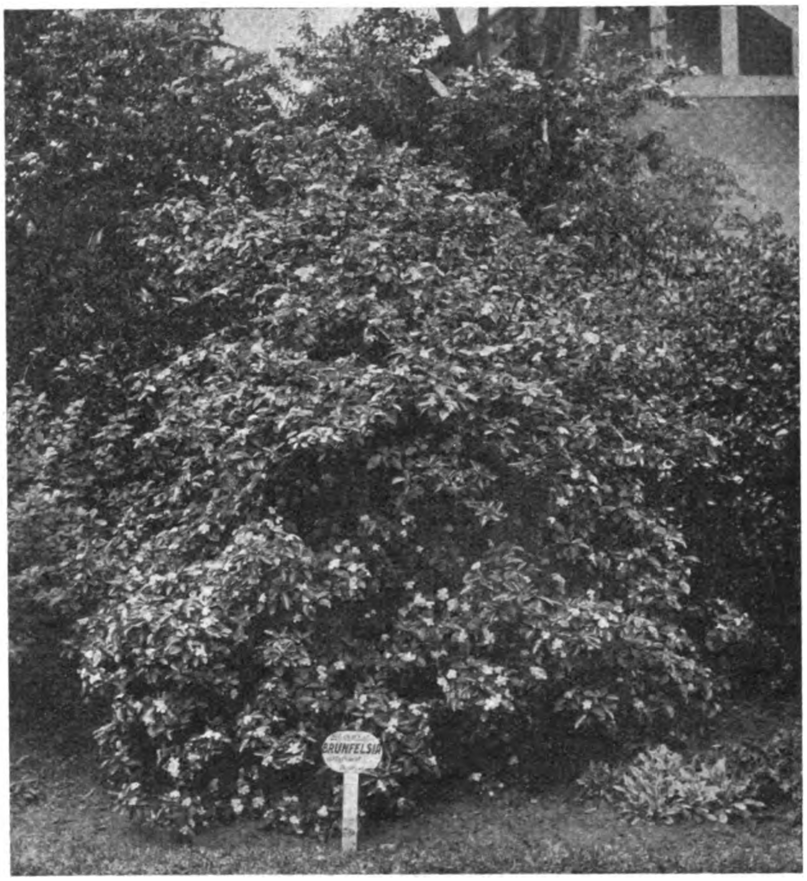


FIG. 327.—BRUNFELSIA LATIFOLIA IN THE SYDNEY BOTANIC GARDENS.

Appointments for the Ensuing Week.—Monday, December 15: National Chrysanthemum Society's Floral and General Committees meet. Tuesday, December 16: Royal Horticultural Society's Committees meet; Croydon and District Horticultural Society's meeting; Winchester Horticultural Society's lecture. Wednesday, December 17: Sheffield Chrysanthemum Society's Smoking Concert. Friday, December 19: Eastbourne Horticultural Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago. — *Nepenthiform expansion in Cabbage Leaves.*—I have every now and then had examples shown me of the nepenthiform expansions noticed and figured on p. 772, and this description of monstrosity was peculiarly abundant here during the past summer. My attention was called to more than one instance in the cottage gardens, and I especially examined a bed of Cabbages in which the majority of the plants were thus affected. The immediate cause of the phenomenon appears to originate in the unequal development of contiguous portions of the leaf, whereby one part ceasing to extend, those next it are carried forward and produce a folding and crumpling of certain portions, which in their early stages of growth had become detached from the rest, and these afterwards developing apart assume many fantastic forms, and among these that of the cup-shaped appendages of which you have figured an example. I have not observed the margin of the cup in its fresh state to be at all reflexed as your figure represents it; the form is usually more strictly conical. In all these examples of cristated parts the under surface of the leaf is the outermost and the upper the innermost of each detached fragment. In some there is very little or no parenchyma developed, and the growing fragment (if I may use the expression) is a mere modified mass of the midrib or of a lateral nerve. A healed scar may be seen upon the main body of the leaf at the spot from which the fragment was originally detached. In all this I doubt if we can trace an analogy to the formation of the cup of the Rose or pitcher of Nepenthes, nor yet to the formation of branches without reference to axillary position. Whether we have here any indication of a partial tendency in the leaf to assume the condition of one or other of the floral appendages, I do not feel prepared even to suggest. It is very common to find a bract on the flower stalk of a Tulip, one-half of which remains green whilst the other half has become petaloid. In such cases a curious result is sometimes produced upon the flower stalk. This stalk on the side, and immediately above the coloured portion of the bract, has a tendency to stop growing, whilst on the other side, and above the green portion, it continues to extend as usual. The stalk in consequence curves and cracks in several places, and sometimes so violent a snap ensues that the flower is fairly decapitated. Of this description of self-immolation I possess an excellent example or two in my herbarium. *J. S. Henslow, Hitchin. Gard. Chron., December* 15, 1849.

PROTECTING PLANTS IN WINTER.

The protection of tender plants from frost during the winter constitutes an important part of the gardener's duties and calls for a good deal of forethought, yet it not infrequently happens that would-be protective measures prove rather harmful than beneficial.

The covering of a plant does not necessarily protect it from frost, indeed, under certain conditions the cover may act as an auxiliary of frost and defeat its own object, as a study of the principles on which protection must be founded will show. These principles are broadly that dryness protects and wetness destroys. Dryness protects because it is an essential condition of non-conductivity, and, therefore, whatever promotes dryness in the open air tends to the protection of vegetation from the assaults of frost. Wetness, on the other hand, destroys by its rapid conduction of heat and thus becomes an auxiliary of frost.

All protective measures converge directly or indirectly on the conservation of the warmth of the soil, that is to keep the heat that the earth gives out for the benefit of vegetation instead of allowing it to diffuse in the great body of the atmosphere. One of the most effectual of non-conductors, and, therefore, one of the best of plant protectors, is dry air, hence the great value of dry mats and litter, laid on loosely so as to enclose a mass of warm air within and amongst the material; these are powerful aids to the cultivator in keeping out frost, or rather, to perhaps one ought to say, in preventing loss of heat.

That the use of covers for protecting plants from frost is highly beneficial, if intelligently employed, is beyond question. The practice of permanently covering plants, however, by tying heavy flannel-like material around them is to be condemned, as not only does the material cease to be a repellent of frost so soon as it becomes wet, but the plant, largely deprived of light and air, loses vitality and is less able to resist cold winds in late spring after uncovering has become necessary.

For protecting plants on walls, nothing is more effective than light canvas or straw screens placed in front of them. The effect of this is to create a blanket, several inches thick, of still air between the wall and the screen. Cut off from the cooling effect of the outside air by the screen and helped by radiation from the wall, the temperature of this stratum of air remains many degrees higher than that outside, and the degree of protection afforded is much greater than can possibly be obtained from the same material tied closely to the plant. Ornamental foliage plants, which are liable to suffer from cold winds even more than from frost, may be protected by similar screens, wattle hurdles, or even by Spruce branches fixed to supports around them.

The protection of bulbs and roots in the soil is not quite so much under the control of the cultivator, as he is frequently not able to take advantage of this dryness as a protective agent, but it is obvious that it is not wise to plant any subjects of doubtful hardiness in any but the most perfectly drained soils. It is surprising how much frost a few inches of dry ashes, sawdust, or similar material will keep out, and it is often possible to give special plants a covering of such material immediately before a spell of frost, and so long as it can be kept dry, its protective power is very high. *W. Auton.*

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Laelia anceps.—The various forms of this useful winter-blooming Orchid are fast developing their flower spikes. The coloured forms are usually the first to open their blooms, followed a little later by the chaste white varieties. The plants should now be placed where they will be exposed to all the light available, and afforded a moderate supply of water at the roots until the flowers are fully expanded. Care should be taken to remove, with a wet sponge, the gummy deposit that forms on the flower buds, otherwise the upper bracts will adhere to the sepals and they will fail to open properly. L. albida, L. autumnalis, and L. furfuracea require very similar treatment. When these plants have done flowering water should be almost withheld, allowing them just sufficient moisture to keep the pseudo-bulbs plump through their period of rest. Plants that develop roots from the bases of the new pseudo-bulbs during the winter may be repotted, but do not disturb them any more than is absolutely necessary. Owing to the large amount of water these plants require whilst they are growing actively, good drainage is essential, and an open-textured rooting medium of coarse Osmanda-fibre. A night temperature of about 55° is suited to these plants during the winter.

Dendrobium.—Such evergreen Dendrobiums as D. Farmeri, D. thyrsiflorum, D. densiflorum, and others of this section that have completed the growth of their pseudo-bulbs should now be given a long season of rest, placing them in a light position near to the roof-glass in a house where the temperature will not fall below 55°. Afford the plants less water at the roots than hitherto, but do not keep them so dry as those of the deciduous section; give them just sufficient moisture to maintain their fleshy leaves in a plump, healthy condition. D. formosum giganteum and D. Phalaenopsis have been flowering for some time past, and after the flower scapes are removed, a rest of several weeks' duration should be allowed by placing them in a house with an average temperature of 60°, with a somewhat dry atmosphere. Afford them sufficient water at the roots to maintain the pseudo-bulbs in a plump condition. Dendrobiums of the spring-flowering group have now completed their growth, and water should be applied in moderation for the next few weeks. The pseudo-bulbs should not be allowed to become shrivelled. Keep the plants fairly cool, and, after the resting period is over, the change to warmer conditions should be gradual, or many of the flower buds may turn yellow and decay instead of developing.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Carnations and Pinks.—Carnations and Pinks in beds should have the soil pressed firmly around them after frost. Examine the beds for slugs during mild weather and see that large plants of two or more years' growth are not destroyed by mice.

Tuberous-rooted Begonias.—The foliage of these Begonias having completely died down, the tubers may now be cleaned and stored in boxes in a little leaf-mould, but they should be kept in a cool, dry place, where they will not start to grow or a weakening of the plants will result.

Helleborus. To obtain early and unstained flowers of the Christmas Rose, the plants should be covered with hand-lights. First remove any decaying leaves and clean the soil around the plants. If the weather is frosty mats may be thrown over the hand-lights at night, but they should be ventilated freely during the day.

Saxifraga peltata.—The large, handsome leaves of this plant made it an ideal subject for positions by the lake side or on the borders of a stream. Plants in such positions with access to moisture and a free root run grow with great luxuriance and present a sub-tropical appearance.

Winter Colour Effects.—Willows and Dogwoods, with coloured barks, are admirable subjects for the production of colour in winter, and where space permits they should be planted extensively for this purpose. Planted in broad bands on rising ground by the lakeside, they present a pleasing effect when most other vegetation is dull and lifeless. The beauty of the picture is enhanced in clear weather by getting a double effect from the reflection in the water and the whole result is really charming. When this type of planting is carried out on a large scale a certain amount of replanting is necessary every year, as in order to obtain intensity of colour in these plants it is essential that hard pruning should be practised, and this does not make for longevity in the plant. It is wise, therefore, to institute a system of planting whereby the whole of the plantations may be renewed in a cycle of ten or twelve years. Cuttings of the scarlet and golden-barked Willows, as also the crimson-barked Dogwood, root as freely as the common Willow, hence there is no difficulty in keeping up the supply of material, and cuttings inserted now will make good plants for next year's renewals. Owing to the accommodating nature of these plants also, transplanting may be carried out at the dead season of the year and labour may often be utilised for this purpose when it would not be wise to move many other shrubs.

PLANTS UNDER GLASS

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Roses.—Roses growing on the roof or walls of the greenhouse should be pruned forthwith. This should comprise the removal of all small wood of more than one year's growth, the cutting back of all soft, unripened growth made last season to a mature bud, and the shortening and regulating of the remaining mature growths from which the best flowers will be produced. Overhaul the beds or borders in which the plants are growing, taking away some of the old soil and substituting new, which should consist of good turfy loam, some well decomposed manure, and a good sprinkling of coarse-grade bone-meal.

The Stove-house.—Euphorbia jacquiniaeflora is one of the most beautiful and useful of winter-flowering stove plants, both as regards its decorative value and for the length of time it remains in flower. The blooms may be used in a cut state, and with pleasing effect, as a subject for table decoration. When used as cut flowers, however, the stems of the severed growths should be dipped into nearly boiling water immediately after taking them from the plants. This will prevent excessive bleeding and consequent flagging. Continue to feed the plants until half the flowers have developed, after which stimulants should be withheld. When this stage has been reached a drier atmosphere should be maintained to obviate damping of the flowers, and a somewhat cooler temperature to prolong the flowering period. Euphorbias, are however, very susceptible to sudden fluctuations of temperature, and should never be exposed to a cold atmosphere.

Euphorbia pulcherrima (Poinsettia).—As the bracts develop upon these plants, they, also, should be afforded a drier atmosphere. Though a more showy subject, yet not so graceful a plant as E. jacquiniaeflora, the Poinsettia is a valuable plant for room decoration. It may also be used in a cut state, taking the same precautions to prevent flagging as advised for its companion plant.

Clerodendron fallax.—Plants which were raised from seeds early in the year and have now passed out of flower should be partially rested by keeping the roots somewhat on the dry side; a moist atmosphere should, however, be maintained and a temperature of about 60° during the semi-dormant stage. After a period of rest the plants should be transferred to larger pots and be grown in the stove-house to flower again next summer.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Sweet Cherries.—These trees may now be attended to as regards pruning and nailing in the growths. Where the laterals were pruned back in the summer to four or five buds, they should now be shortened to one or two buds, making a clean cut with a sharp knife, and the leaders reduced to one-third their length. Examine the trees to see that the ties or shreds are not cutting into the bark, as this is a frequent cause of gumming. If the trees have been infested with scale insects, wash them thoroughly with Gishurst Compound dissolved in hot water. Cherries should not be planted in excessively rich soils or they would be liable to make gross growth. Medium-sized shoots are the best as these do not require much pruning, which often results in gumming. It is far preferable to plant in ordinary soil with plenty of mortar rubble or slaked lime added, and then to feed the trees when they are cropping heavily. The trees should never be allowed to become dry at the roots; they should be watered in the autumn, especially those growing close to the wall.

Morello Cherries.—The method of pruning the Morello Cherry differs somewhat from that practised for Sweet Cherries in-as-much as the trees fruit on the young wood, like Peaches and Nectarines. So soon as the foliage has all dropped, go over the trees and take out as much old wood as possible, all rank shoots, and those growing at right angles to the wall. Train in the young shoots at three or four inches apart, or an even greater distance if desired. These trees growing on north walls are apt to become green with algae, in which case they should be detached from the walls and the branches well scrubbed. In nailing the shoots, see that the tree is well balanced on each side. The soil in which Morello Cherries are planted needs to be renovated fairly often, as the trees are usually great croppers, therefore, when the nailing of the shoots is finished, take off the top layer of soil and substitute fresh loam, mixed with mortar rubble and coarse bone-meal.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Tomatos.—The present is a suitable time to sow a few seeds of Tomatos to raise plants for fruiting early in the spring. A good plan at this season of the year is to fill small sixty-sized pots with an open compost and place three or four seeds near the centre of each pot, eventually thinning the plants to one in each receptacle. Grow the young plants near the roof-glass in a house having a temperature of 58° to 60° to ensure sturdy growth.

The Orchard House.—Trees planted out in borders should receive their final pruning. When this has been completed the house should be cleansed and the walls lime-washed, work which may be performed in wet or wintry weather. The trees should also be thoroughly scrubbed with a soapy insecticide, care being taken not to injure the buds. This treatment is especially necessary if red spider has been in evidence, for nothing paves the way to success more than clean trees free from insect pests. When this work is finished the shoots may be tied in at leisure, for as a rule trees that are planted out are not started into growth until February. The house cannot be kept too cool and airy, especially if it has been used for housing Chrysanthemums. The roots of the trees must not be allowed to suffer for lack of moisture, as drought is often the cause of bud-dropping. When these details have been carried out the borders should be carefully pricked over with a fork, the surface soil removed, and sweet compost consisting of good loam, bone meal, wood ash, and a good sprinkling of lime or old mortar rubble substituted.

General Remarks. — Cucumbers that are fruiting should not be overcropped at this season of the year. At the time of writing the weather has been most favourable for this crop, therefore all the more care is needed in this matter. Afford the roots light top-dressings as required. Tomatos with ripening fruits need a little extra care with regard to watering; for preference keep the soil on the dry side. Admit air whenever the outside conditions will allow, if only for a very short time, and keep the temperature as near to 60° as possible.

THE KITCHEN GARDEN.

By Walter Y. Staward, Gardener to Mrs. John Feeney, The Moat, Berkswell, Warwickshire.

Potatos.—Seed tubers intended for forcing should be placed in shallow boxes, rose ends up, and stood in a warm house to sprout. If intended to be planted out in frames the latter should be got ready. Use plenty of manure to generate the necessary warmth, and cover the manure with soil in which to plant the tubers, which should not be done until the dung and soil have settled into position. If pots are used these should be got ready, washing them both inside and out, and placing large, clean crocks in the bottom and rough turf on top of these for drainage. Only half fill the pots with soil to allow room for top-dressing the roots later. Certain varieties force better than others, and it is wise to try several sorts to prove which are the best for cropping and earliness.

Jerusalem Artichokes.—Tubers of Jerusalem Artichokes may now be lifted and stored in ashes or leaves in case hard frost sets in and makes the soil too hard to permit of lifting them. The tubers will keep for a considerable time in sand if it is not too wet or too dry.

Swede Turnips.—The roots, if not already lifted, should be dug up forthwith and stored in a cool place. Swedes are more appreciated from now onwards than any other kind of Turnip on account of their sweetness and flavour.

Carrots.—Plants that were raised from seeds sown in frames in the latter end of the summer and intended for pulling early in the year, will now be turning a trifle yellow on the older foliage. These faded leaves may be pulled off, also any that are decayed. Keep Carrots in frames moderately dry and ventilate the frame freely on bright days.

Seakale.—A few inches of ashes should be placed around the crowns of Seakale that is intended to remain in the soil over the winter. The ashes should be passed through a one-inch mesh.

THE ROSE GARDEN.

ROSE ETHEL CHAPLIN.

This new Lemon-yellow variety (Fig. 328) was awarded the Certificate of Merit of the National Rose Society when shown at the Metropolitan exhibition of the N.R.S. on June 27 last by Messrs. Chaplin Bros., Ltd.

It is a hybrid Tea variety with long, stiff stems and dark, glossy foliage. The plant is vigorous-growing and of branching habit, producing the Lemon-yellow blooms with freedom. The flowers are long and full-petalled, making fine big blooms of the shape seen in the illustration. A companion variety named Ellen Terry was shown by the same firm on the aforesaid occasion and this also received a Certificate of Merit, but, as shown, the variety Ethel Chaplin is the superior of the two.

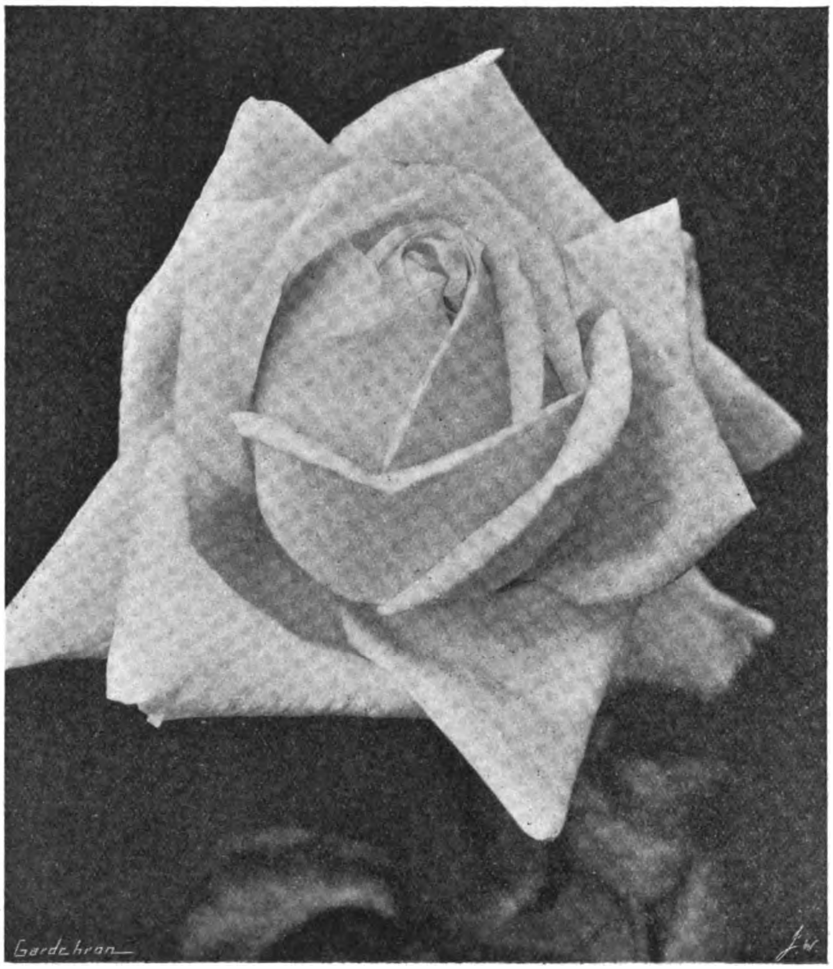


FIG. 328.—ROSE ETHEL CHAPLIN.

DECORATIVE VALUE OF ROSE HIPS.

Many of the Rose species have a beauty apart from their flowers, and I cannot recall a more glorious sight than an established clump of Rosa Moyesii and R. Hugonis in full fruit. The colour and shape of their berries cannot fail to find many admirers, whilst their decorative value has much to commend it.

Both these species are charming subjects for the shrubbery, especially when the growth is allowed to develop unrestrictedly. Their sprays of flowers, of a beautiful tint, set off by the serrated foliage, give an enchanting effect as dinner-table decorations or for use in room embellishment.

There is a goodly number of Rose species worthy of planting for the production of hips, especially Rosa pomifera. As described by Parkinson, "the whole beauty of this plant consisteth more in the graceful aspect of the red apples or fruit hanging upon the bushes than in the flowers, or any other thing."

R. acicularis produces Pear-shaped hips about one-inch long, and is well worthy of a position in the shrubbery.

R. macrantha gives great beauty by its production of orange-coloured hips. Both R. altaica and R. Hugonis develop a crop of black or very dark-coloured hips that make a pleasing contrast when associated with the scarlet and orange tinted kinds. R. calocarpa will produce an abundance of rich scarlet, globose-shaped hips most useful for decorative purposes. R. lucida, and also R. Fendleri present pictures of great beauty with their hips hanging all the winter, and a coat of snow on those bushes laden with their orange-shaped fruits of a rich crimson colour, gives an effect that commands attention.

R. rugosa and its forms occupy a high place amongst these fruit-forming Roses, as the scarlet hips are most noticeable in winter. Sprays of golden Privet sparsely used amongst the branches of Rose hips will enhance the colouring of the decorator's efforts. *G. L.*

FLORAL DECORATIONS IN PRIVATE ESTABLISHMENTS.

ALTHOUGH members of the older generation of gardeners are conversant with the art of decorating, many of the young men have had few opportunities of becoming proficient in this important branch of horticulture. Signs are not wanting, however, of a distinct revival in floral decorating; therefore gardeners generally should do whatever lies in their power to stimulate and encourage this interest. Ladies are fond of flowers and it is always wise to study their tastes, as this fact illustrates. Our chief was visiting Holland House Show when the lady of the house sent out for a few flowers to wear at an afternoon function. Carnation Lady Ulrica, an old salmon-red variety, was sent in. On the following day an urgent message requested my prompt attendance upon her ladyship, who rebuked me for sending in red flowers as she could not possibly wear them seeing they were of the opposite political colour!

A good general rule to follow is to use yellow flowers in light rooms, or blooms which light up well in the sunshine; pink, salmon, and mauve shades in the drawing room; bronze, pink, and red shades in the dining room; but the prevailing colour of the room must always be considered. For private rooms homely flowers are desirable, such as Violets, Carnations, Wallflowers, Lily-of-the-Valley, and Roses, as these invariably give pleasure and provide fragrance.

Where the plate takes pride of place the flower scheme should be used to enhance the whole effect. The same remark applies to table plants, such as Palms, Dracaenas, Codiaeums, and Ferns; where vases are not allowed, mounds of Selaginella should hide the pots, with flower petals or flower heads, placed lightly in the mounds. The old-fashioned "centre-piece" has almost disappeared, and few desire its return, because glasses and vases of flowers lightly and naturally arranged (but not sparsely) give a prettier effect. The need for a reserve of material for table decoration is often a pressing one. One day about 7.30 p.m., orders arrived for the dinner table to be decorated owing to the unexpected arrival of the owner. We rushed down to the house with flowers of Anthurium Scherzerianum—it was half-a-mile to the mansion—and were met with the sarcastic observation, "Dinner is served." On another occasion there was a happier ending. About 6 p.m. it became known in the bothy that an exalted personage was coming to lunch next day. So window boxes were hastily dressed with Box and flowering and foliage plants were selected, and next morning by about 9 a.m. three van loads of plants and flowers had been arranged in the mansion. Our reward for this "intelligent anticipation" was a half holiday.

With the exception of light foliage plants it is always a good plan to keep to one kind of flower or plant, as in bulk they give a more satisfying effect. At this season of the year Chrysanthemums are mostly used, and the shades of bronze, yellow, pink, red, and white are all suitable for the various purposes in the house, and by selecting varieties the various shades of colour may be continued over a wide period. Mary Richardson and Mary Morris give bronze flowers over a long season. Carnations, now that certain varieties are very free-flowering, are always favourites; Lady Inverforth, salmon, has given us about five blooms per plant, and a fair batch provides enough of this colour. Britannia, though old, is still the finest flowering scarlet variety.

Orchids, such as Cypripediums, Laelias, Cattleyas, Dendrobium nobile, D. Phalaenopsis Schroderae, and Calanthe Veitchii have long-lasting flowers and provide brilliant colouring. Smilax, Selaginellas, Vitis leaves, sprays of Berberis, and other berried shrubs, including Arbutus Unedo, etc., are all seasonable and useful subjects.

A quarter of a century ago gas lighting was more common than at present, and its evil effects on plants have still to be faced in many places. Plants that have withstood gas well with us are Primulas—especially P. malacoides — Cinerarias, Stocks, Winter-flowering Begonias, Streptocarpus, Gloxinias, Celosias, Hydrangeas, Cyclamens, Clivias, and foliage plants generally. But Pelargoniums, Fuchsias, Lobelia tenuior, tuberous Begonias, Browallias, Coleus thyrsoideus, and Azaleas have all failed rapidly under gas light.

Vases of specimen blooms give fine effects in large reception rooms, as do groups of plants or specimens, with suitable edgings. Chrysanthemum Mrs. R. Luxford, as illustrated in Fig. 127, p. 349, would be an object of general admiration.

Bulbs in pans and pots, such as Hyacinths, should be used with discretion owing to their strong perfume. Daffodils, Iris tingitana, Tulips, and Freesias are all suitable when used as specimens or made up in trays and groups. *George H. Emmett, Evesham.*

HARDY FLOWER BORDER.

SENECIO.

THE strong-growing herbaceous Senecios are ideal subjects for bold, informal grouping in the hardy flower border, the wild garden, by the stream, and for island planting. They are strong in growth, yet not too aggressive, and produce a wealth of colour over a long period, during late summer and autumn.

Of the several distinct types, the most satisfactory for general decorative effect are Senecio Veitchianus, which forms a clump of large, cordate foliage, from which rise tapering spires five feet to six feet tall, thickly set with yellow flowers two inches across; S. Wilsonianus, which is similar in habit, has larger leaves and a longer column of orange-coloured flowers; and S. clivorum the flowers of which are borne in loose corymbs on branched spikes, four feet high. They are orange-coloured, about three inches in diameter. The colour of the flower stems is variable: some are stained crimson, others are a dull green. The rounded foliage is over one foot in diameter.

S. tanguticus is a graceful plant of bushy habit, four feet tall. The numerous flowers are borne on light, feathery panicles, and, later, the persistent seed vessels are an attractive feature.

S. pulcher is less robust growing and requires a position sheltered from strong winds, the fleshy leaves being easily broken. It is a showy border plant, two feet high, with rosy-purple, yellow-disked flowers.

PODOPHYLLUM EMODII.

PODOPHYLLUM Emodii, the May Apple, is a suitable and by no means unattractive subject for growing in a moist, rich soil in a shady and sheltered spot. It is of easy culture under the above conditions, and well able to take care of itself. P. Emodii sends up, in spring, large, umbrella-shaped leaves, whose upper surface is marbled with tints of red and bronze, whilst the margins are deeply cut into wedge-shaped lobes. Soon afterwards the white, cup-like flowers appear on stems a foot or so in height, and these are followed by fruits which are as big as a hen's egg, and colour in the late summer, first to a brilliant orange and then scarlet. Very soon after this the leaves disappear entirely, for the plant is not only herbaceous but one of the earliest to die down. We grow P. Emodii majus, which is over two feet in height, but in other respects much like, the type, in the cool soil at the margin of the bog, and there it succeeds well and promises to be permanent. It may be propagated either by division or by seeds, the latter being yielded in abundance by the big, fleshy fruits. *Fred W. Jeffery.*

ANNUALS FOR GREENHOUSE AND CONSERVATORY DECORATION.

MICHAUXIA CAMPANULOIDES.

ALTHOUGH this interesting plant is classed as a biennial, it may be for our purpose regarded as an annual. For conservatory decoration it should be raised from seeds sown about the middle of July, and these germinate best in a cold frame. When fit to handle the seedlings should be pricked off into a pan or shallow seed-box, and when again large enough, be transfered singly into small pots, afterwards giving them a shift into 48-sized pots, in which they will pass through the winter. Early in the New Year a further potting will be necessary, and six-inch or seven-inch pots used.

During all stages of growth any good potting compost will suffice, and only cold frame protection is needed until the flower stems appear, when more head room will be needed; at that stage the plants should be removed to a cool greenhouse.

During the winter months water should be supplied carefully as Michauxias are apt to suffer from damp. Well-grown plants attain a height of three to four feet, and when in flower they have a very distinct appearance with their white flowers, the petals of which are recurved. Michauxia campanuloides may also be planted out in the open border during the summer months.

MIMOSA PUDICA (SENSITIVE PLANT).

THIS interesting plant always attracts attention, and is easily raised from seeds sown in a warm house during March or April. Its successful cultivation presents no difficulty, as it grows freely in any good potting compost, and in a temperature of about 50°. During the summer it will succeed in an ordinary greenhouse or intermediate temperature. The young plants should be potted on as they require it until they are in five-inch or six-inch pots, in which they will remain for the season.

NEMESIAS.

THESE beautiful subjects are especially useful for the decoration of a small greenhouse. The large-flowered varieties of N. strumosa are very popular, and afford a wide range of colours, varying from white, pale yellow, orange, rose-pink, and red, to crimson and scarlet. The smaller-growing and smaller-flowered varieties known as Blue Gem and White Gem, are really forms of N. versicolor. There are also several other varieties in this class, viz., Aurora, a very beautiful crimson and white bicolor; and a blue and white bicolor variety known as Twilight, while other good named varieties are Fire King, Fiery Scarlet, and Orange Prince.

All the Nemesias are very beautiful as pot plants for spring flowering. Seeds should be sown from the end of August to the middle of September, in cold frames. Cool conditions for seed-sowing are very important, for if sown in heat the varieties of N. strumosa generally fail to germinate, and ignorance of this fact has often led cultivators to complain that the seed was bad. After the seeds are sown, and the seed-boxes stood in a cold frame, they should be kept shaded until germination takes place. When fit to handle the young seedlings are best pricked off about two inches apart in shallow seed-boxes, and later they may be potted singly into small pots, afterwards potting them into five-inch pots, in which they may be flowered.

Although Nemesias may be kept in cold frames all the winter it must be remembered that they are natives of S. Africa, and therefore a cool, bright, and airy greenhouse will afford them ideal winter conditions.

Nemesias grow quite well in any good potting compost, but careful watering is essential during all stages of their cultivation.

NEMOPHILA.

THERE are several useful species of Nemophila, including N. insignis, of which there are several varieties, including a white one. N. Menziesii also has several varieties, including the plants generally known in gardens as N. atomaria and N. discoidalis. N. maculata is also another pretty and well-known species.

They are all trailing plants, and at one period were more commonly grown in the greenhouse than at present. N. insignis, however, with its beautiful, sky-blue flowers, is worthy of more general cultivation. Seeds are best sown in a cool house about the beginning of February, and if small seedlings are pricked out about two inches apart into shallow seed boxes they will soon be large enough to be placed singly in small pots. Later, they may be shifted into five-inch pots, in which size they may be flowered. As Nemophilas are soft-textured plants, cool conditions and plenty of air are essential at all times. The slender, prostrate stems, which attain a length of eighteen inches, must have timely support, a few slender sprays of Hazel being best for this purpose. On account of their prostrate habit, Nemophilas are ideal for filling hanging baskets, for suspending in the cool greenhouse or conservatory, using three to six plants in a basket, according to size. Nemophilas grow freely in any ordinary potting compost, and require perfectly cool treatment at all times and careful watering.

NICOTIANA AFFINIS.

THE sweetly-scented Tobacco Plant, Nicotiana affinis, is well-known as a border plant, where it is valued for its delicious fragrance during the evening. As its flowers remain closed during the day this is a disadvantage for the conservatory unless the latter is attached to the dwelling-house, when the Nicotiana is well worth growing for the sake of its fragrant flowers. In addition to the white-flowered N. affinis, there are strains of hybrids between this species and N. Sanderae. In these the colours range from white through varying shades of pink and rose to red; unfortunately, a considerable percentage of the seedlings have flowers of poor, weak colour. However, the true N. Sanderae, or a good selection of it, is ideal for pot culture, as it grows from three feet to four feet tall, and is very useful for large groups in the conservatory.

For spring flowering, seeds should be sown in a cool house about the middle of September, and for succession other sowings should be made during February, April and June; by these means a display may be maintained over a long period. Any good potting compost will serve, and cool house treatment should be provided during all stages of cultivation. After the young seedlings have been pricked off singly into small pots, the subsequent cultivation consists in potting them on as they require it until they are in six-inch pots, in which excellent specimens may be flowered. The central flower stem—which branches freely—should be supported by a neat stake.

Green and white fly are apt to prove troublesome; the former is, however, easily kept in check by frequent light fumigations, while the other, and more serious pest, must be kept in check by fumigating with hydrocyanic acid gas, or by some other safe and reliable specific obtainable from the horticultural sundriesmen. These Aphides not only check the progress of the plants, they give them a very dirty appearance, and thus spoil them for decorative purposes.

Nicotiana suaveolens is a pretty little Australian species, sometimes offered in seed lists as Miniature White. It is a very charming plant for the stages of the conservatory and greenhouse. The plant is of slender growth, only attains a height of one foot to eighteen inches, and bears beautiful, white, tubular flowers. N. suaveolens, introduced into cultivation in this country in 1800, is a very refined-looking plant, and a gre contrast to the usually strong-growing members of its family. It succeeds under the treatment indicated for N. affinis and N. Sanderae, with the exception that perfect specimens may be grown in forty-eight sized pots.

Like N. Sanderae, this species may be had in flower through the summer and autumn by means of successional sowings. *J. Coutts, Royal Botanic Gardens, Kew.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM WHITE STAR.

CLIVE Cookson, Esq., Nether Warden, Hexham-on-Tyne (gr. Mr. W. J. Stables) sends a flower of this fine Cypripedium, raised between C. niveum and C. Alcibides (Leeanum × Mons. de Curte). It is one of the best and largest of the C. niveum crosses, the flower being equal in size to that of a good C. Leeanum, but closely adhering to C. niveum in the white ground of its sepals and petals. The dorsal sepal has a median line of purple spots on a Primrose ground and some lighter spotting on each side. The broad petals have a light purple line up the middle, the sides being flushed with blush white. The lip is wax-like in appearance and clear white, while the prominent staminode is tinged with yellow.

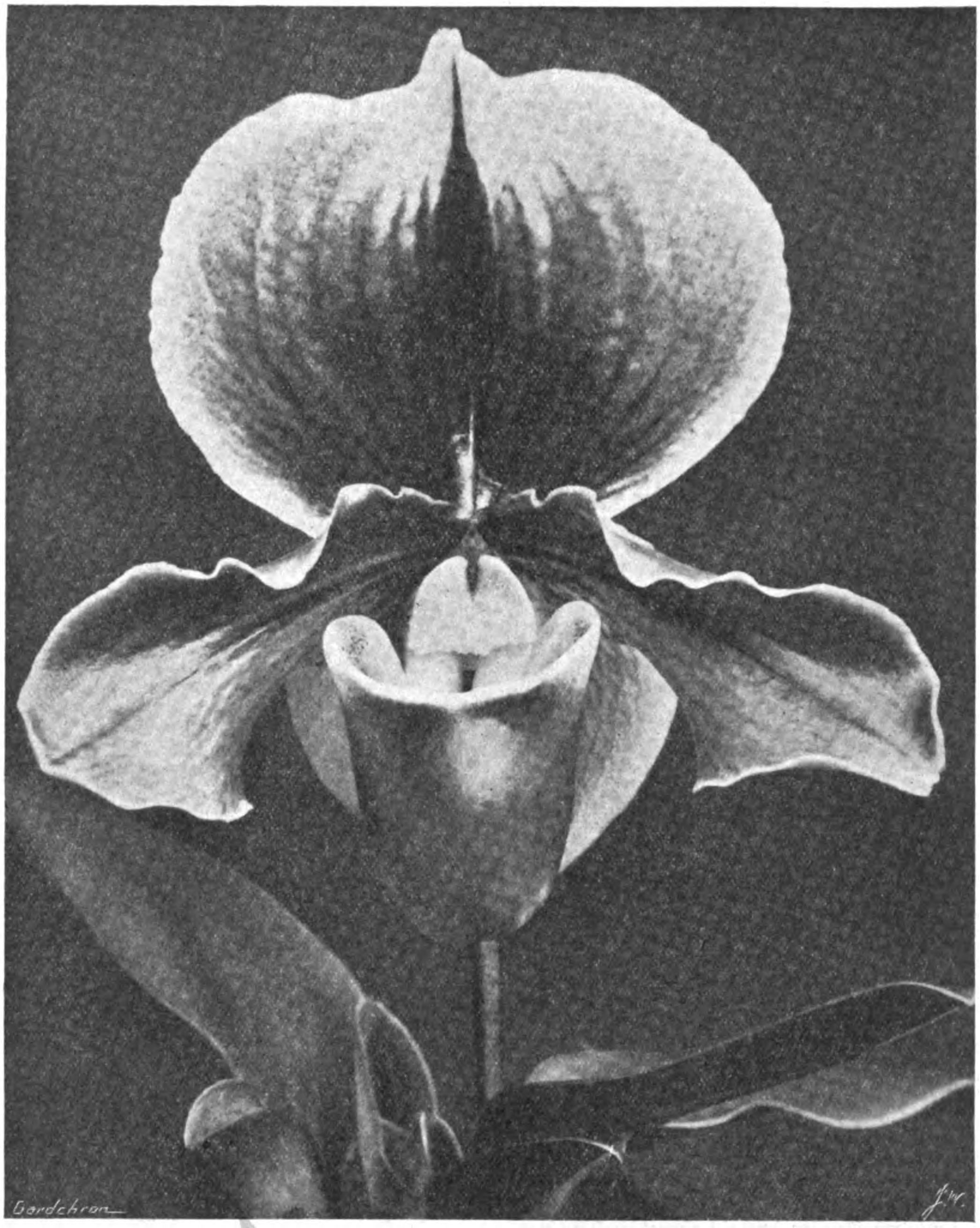


FIG. 329.—CYPRIPEDIUM CRUSADER, WESTONBIRT VAR.
R.H.S. First-Class Certificate, December 2 (see p. 395).

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard, 1543.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

GARDEN-CRAFT IN THE CANTICLES—X.

The Arbour and Pergola.

THERE is a passage in the "Song of Songs" which clearly points to the very ancient custom of planting or training fruit and other trees so as to serve as arbours, summer-houses, and pergolas. The word Apple must in this instance, as in so many others, be taken generally. It includes the Orange and Citron, and may even be extended, as we shall see, to the Fig and the vine. We read (Canticles II, 3): "As the Apple tree among the trees of the wood, so is my beloved among the sons. I sat down under his shadow with great delight, and his fruit was sweet to my taste." Here we have the picture of a lover resting under the cool foliage of the tree in the garden (as contrasted with those in the wood), and finding delight alike in the shade and in the luscious fruit. So much was this the custom among the Jews that it passed into a proverb; for when ease and luxury, or meditation and devotion, were pourtrayed, it was usual to revert to this very figure. When Jesus said to Nathaniel: "I saw thee under the Fig tree" (John I. 48-50), He alluded to a usage which dated at least from the spacious times of Solomon. "Judah and Israel dwelt safely, every man under his vine and under his Fig tree" (1 Kings IV. 25). Those days had to give place to others when the Assyrian and Egyptian invader brought unrest and disquiet, but the prophets could find no simile more suggestive of the peace and prosperity which should again be established; and they comforted men with the assurance that "They shall sit every man under his vine and under his Fig tree, and none shall make them afraid" (Micah. IV. 4). Again (Zech. III. 10): "In that day, saith the Lord of Hosts, shall ye call every man his neighbour under the vine and under the Fig tree." Similarly in the Apocrypha (1 Macc. XIV. 12) we read that "He made peace in the land, and Israel rejoiced with great joy, and they sat each man under his vine and under his Fig tree, and there was none to make them afraid"

How natural all this seems when we take up any book of modern travel in Turkey, Greece or Palestine: "Not long is it after our rugs are spread under a Fig tree than the curious villagers surround us, the women in white, loose garments, the men in sheepskins. . . . A ride to Sofia through well-watered lands is refreshing, and during rest under a great Fig tree we think of the stories of Helen Menelaus, Paris, and others." Or, as another writes: "The vine, particularly in Turkey and Greece, is frequently made to intertwine on trellises around a well, where, in the heat of the day, families collect and sit under their shade." If, therefore, we read fruit trees instead of the Apple we at once see how applicable this passage is to the usages of the East.

Arbours and pergolas are not expressly named in the 'Song of Songs" or in the Bible, but their equivalents were in existence from the earliest times, since they were a necessity in hot climates. Jonah sought shelter under a Gourd, and any broad-leaved plant which could be trained over trees, poles, or lattice-work would be utilised for the refreshment it would afford during the heat of the day. "For the heat I covered you with the leaves of the trees," writes Esdras, voicing the message of God to the people of Israel (2 Esd. I. 20), evidently in allusion to the custom of seeking shade under the foliage of the Fig tree, vine, or other umbrageous plant. "In the East," writes Burton in his remarkable pilgrimage (*Al Madinah* I. 9), "man wants but rest and shade: upon the banks of a bubbling stream, or under the cool shelter of a perfumed tree, he is perfectly happy." But shade is not always to be had without trouble, and provision must be made for it in various ways. Among the means of securing it artificially surely none is more delightful than the arbour or pergola; and when to the luxury of the leafy screen can be added that of a delicious fruit, such as Grape or Fig, Apple or Orange, the felicity is complete.

Take the following illustration from Palgrave's *Arabia*; "Around was a pretty garden, with a central tank full of cool, clear water from the adjoining well, and bordered by Cotton plants, Maize, and flowering shrubs, with Date trees at intervals; close by the tank stood an arbour of open trellis-work, but vine-roofed from the sun, just the place for dusty, heat-wearied travellers to repose in and enjoy the freshness of the neighbouring pool. Here our host at once brought mats and cushions, and when we had a moment taken breath, half-reclining under the chequered shade, set before us a dainty dish of fresh Dates, the produce of his orchard." This surely presents us with a facsimile of the scene depicted in the verse quoted at the head of this paper. "I sat down under his shadow with great delight, and his fruit was sweet to my taste." It is a picture of the commonplace, and not of some peculiarly favoured spot in the East. "The broad foliage of Fig trees and Citrons," adds the last-named writer, "invites to repose. We rested the hours of noon, partly in the guest house and partly in the garden, finding peculiar refreshment there during the heat of the day."

From the Book of Esther we learn that tapestries sometimes took the place of trellis-work and pergolas. "In the court of the garden of the King's palace there were hangings of white and violet-coloured cotton cloths, with cords of fine linen and purple to silver rings and pillars of marble. The couches were of gold and silver upon a pavement of red, and white, and yellow, and black marble." Here we have the tent, marquee or royal pavilion, which took the place of the rustic arbour; but such luxuries were reserved for royalty and the opulent. To sit under the vine refers to the custom, which was as common in Palestine as it is in Italy, of training vines over a trellis, or forming a pergola in front of the house, or in the court. The word pergola, which has come very much into vogue of recent years, owing in great measure of the love of rambler Roses, is found in the Roman writers as *pergula*. Vine-arbours were known as *pergulæ*, and the word is explained as "the continuing thing" or adjunct to the house, such as the roof of a verandah, a shed, or a covered way which served for shade and refreshment, as well as for the transaction of business. In making such arbours and pergolas, much ingenuity was displayed, and we learn from Pliny that the ancients prided themselves not a little on their cleverness in this branch of horticulture. Among the Romans the care of the pergula devolved on the fancy gardener, whose topiary work led to his being called the *topiarius*. While the vine was in special request because it yielded fruit as well as shade, other trees, such as the Fig, Apple, and Orange were in use, in addition to such evergreens as the Laurel and Myrtle, the Ivy and Box, as well as the Acanthus.

The shade of the Mimosa or Acacia was treacherous, although the traveller in Palestine and Arabia could often find no other tree under which to recline at mid-day. On this account an Arab poet (Badawin) compares it with the false friend who deserts you in your utmost need. The upright fronds of the Palm, like a fan held perpendicularly while the sun is vertical, rendered this favourite tree also unsuitable for shade at mid-day. From sundry allusions in the Old Testament, confirmed by the study of Oriental houses and gardens in more recent times, we know that it was not unusual to have courts, summer houses, bowers, arbours, covered terraces, pergolas, and other arrangements for comfort during the season of heat and the time of the siesta. Eglon, we are told (Judges III, 20), was sitting by himself alone in his summer parlour or cooling chamber, when Ehud found him. The Old Testament makes a clear distinction between these summer houses or arbours and the buildings used in winter (*see* Amos III. 15); and travellers in the East are very familiar with the temporary booths, bowers and bungalows which serve the former purpose. In some places they are of light construction, with whitewashed walls and roof, shaded with a variety of fruit trees and evergreens, and surrounded by gardens, which are stocked with Melons, Gourds, and Cucumbers, as well as with pot-herbs and aromatics. This throws light on another verse in the "Song of Songs" (II, 9): "He standeth behind our wall, he looketh in at the windows, he glances through the lattice." One of the best writers on this subject holds that this alludes to the latticed arbour which is so well known an adjunct to eastern houses. Lady Mary Montagu may be quoted in illustration.

"In the midst of the garden" (she says in her fascinating *Letters*) "is the chiosk, that is, a large room commonly beautified with a fine fountain in the midst of it. It is raised nine or ten steps, and enclosed with gilded lattices, round which vines, Jessamines and Honeysuckles make a sort of green wall. Large trees are planted round this place, which is the scene of their greatest pleasures." Such bowers or chiosks were found in all Bible lands. The houses of the wealthy in ancient Egypt "had a courtyard with trees in the middle of it, and a large garden round about them. In the garden were fishponds and groves of fruit trees, Palms, Acacias, flowering shrubs with scented blossoms, and a limited number of flowers. There were arbours, too, covered with creepers and vines." Not only were these the resorts of pleasure: they were also, in many instances, used by the devout for higher purposes, as under the Fig tree a man could read and meditate and pray; there an altar could be erected, and the grove be made a sanctuary. Some lines of Virgil, who is rich in allusions to old-time garden lore, have been thus translated :—

> Within the courts, beneath the naked sky,
> An altar rose ; an aged laurel by,
> That o'er the hearth and household gods displayed
> A solemn gloom, a deep majestic shade.

As I bring this article to a close, I find among my papers a cutting from *The Gardeners' Chronicle* for April 21, 1849, page 244. It is entitled "Arbours," and was printed by permission of the Editor of *The Florist*. While it records nothing about arbours and pergolas in the East, it is of peculiar interest as showing how, nearly a century ago, the subject was regarded as being worthy of the attention of English readers and writers. As the anonymous author gives hints respecting the aspect, the plants suitable for use, and the methods of construction, some of my readers may be glad to turn to it by way of supplement to the present article. *Hilderic Friend.*

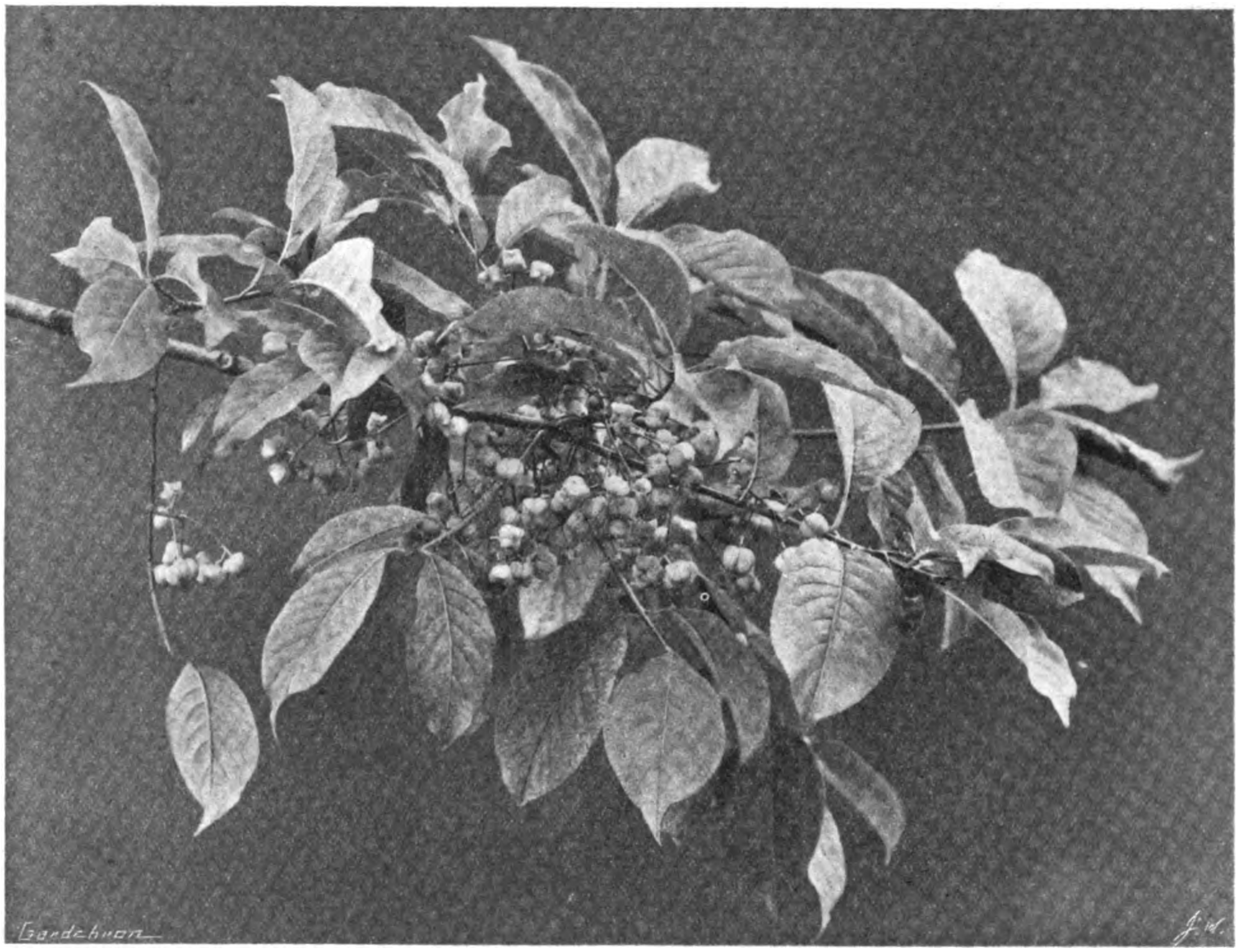


FIG. 330.—EUONYMUS YEDOENSIS (see pp. 306 and 408).

NOTES FROM A WELSH GARDEN.

Twelve degrees of frost at mid-November very largely disposed of as fine a show of autumn tints as we have had for years, though they were unusually late, and it also found a good many things still sappy and unprepared for it. But many berries remain, and some of the Barberries in particular are even more gorgeous than they were. The Cotoneasters, carrying an extraordinarily abundant crop, are equally brilliant, and, for some reason difficult to assign, the birds have this year, so far, passed them by, even the beautiful C. frigida escaping. C. horizontalis, C. h. perpusilla, and an unnamed Tibetan species allied to the former are still amazingly bright in leaf, colour and fruit. C. salicifolia var. floccosa, its elegant leaves slightly bronzed and carrying prominent clusters of almost scarlet fruits, is one of the most beautiful of its class. But among those which ripen their fruit later, C. pannosa can easily claim a foremost place. We are often well into December before the drooping fruit clusters which laden the slender, willowy branches of this splendid evergreen species have thrown off their hairy mask and disclosed their glossy, blood-crimson, which contrasts so strongly with the silvery-grey leafage, and this arresting combination may be enjoyed until February or even later.

In the shelter of the woodland there are still some leaf colours of singular loveliness, the extremely delicate, almost transparent, yellow of Vancouveria hexandra, seen against the blood-red of Galax aphylla, being singularly striking. Here, also, is the soft, chamois tint of Onoclea sensibilis, the rich golden-buff of stately Osmundas, the rich yellow of the prettily-lobed leaves of Boykinia aconitifolia, and, along an open stretch of the water-side, the tawny leaves of a broad belt of hybrid Astilbes are exceedingly attractive.

Vinca difformis is a winter-flowering woodlander of much charm, a prolific bearer of good-sized blooms in a cold, glacier-white, and one that will stand-up to a great deal of inclement weather. Also in blossom and sharing a cool, half-shaded bed, is the St. Helena Violet, which heretofore has confined its flowering to the spring. What the origin of this delightful plant is I do not know, but the colour—the clear, blue-Lavender of the Marsh Violet (V. palustris)—of its little blossoms is distinctly attractive, and they are wonderfully fragrant. Indeed, if there are no more than two or three blooms open one may sometimes smell them half-a-dozen yards away.

Daphne Dauphinii and D. Mezereum var. autumnale, are in full bloom in the rock garden, both of them being deliciously fragrant, and the former came through the frost uninjured. Lithospermum rosmarinifolium, which is quite hardy here in a dry place, had its flowers nipped, but it quickly recovers from such temporary snubs, and is again (November 25) covered with its large intensely-blue flowers, incomparably the most beautiful of its race. On a cool but sheltered ledge that dainty little New Zealand Myrtle, Myrtus nummularia is also proving entirely hardy and easy to manage. Quite prostrate, it makes a mat of rather brittle, very slender branches of a bright, mahogany red, a colour which makes a telling contrast with the very deep green of the tiny, egg-shaped, opposite leaves. This choice shrublet has not yet flowered here, but it is said to do so in this country and to bear scarlet berries.

Morina longifolia is a plant that might be more often seen, for it is a stately perennial which will often continue in bloom until the late autumn. From a large, somewhat flat, rosette of spiny, Thistle-like leaves, it raises a stout, flowering stem to the height of two or more feet, the blooms, which are white to lilac and nearly half-an-inch across, being borne in a number of attractive whorls. M. longifolia is a very old plant, having been known to our gardens since 1839. It is related to the Teazels and, though it comes from India, appears to be quite hardy. Here it enjoys a deep, moist loam.

Rubus irenaeus, planted as a ground covering in a shady place allocated to green-foliaged plants and shrubs of "sub-tropical" effect, promises to fulfil all that was expected of it. This is a vigorous, creeping species with handsome heart-shaped leaves about six inches across, whose upper surfaces are a particularly vivid green with a brilliant lustre, the undersides being covered with a brown felt. It has not yet produced any of its white flowers here, and possibly may not do so in so shady a spot as we have it. But that, as I have inferred here, happens to be a secondary consideration.

Another shrub whose flowering we can afford to be without under similar circumstances is Fatsia (Aralia) japonica. Though it blooms freely enough in more open places, it seldom attempts to do so here in woodland shade. Albeit, this is a fine subject for such sunless spots as that to which the above-mentioned Rubus and other green-foliaged plants are committed. Its striking leaves remain a better green, and they are larger and finer in texture under such conditions than they are in full exposure, and the screening trees here help to ward off autumn frosts, which are very liable to injure any of them which may be late in hardening.

If one were to be asked which of the flowering shrubs grown here has been in bloom for the greatest length of time during the past season I should without hesitation award that distinction to Desfontainea spinosa. This extraordinary shrub opened the first of its scarlet and yellow trumpets in May. It has flowered with the greatest liberality all summer and right up to the November frost, and if it had not been for the latter, it would doubtless, the weather being open, have lingered in colour until Christmas. Dendromecon rigidum is, perhaps, its nearest rival, but the Tree Poppy does not produce anything like the mass of bloom yielded by the Chilean plant. *A. T. Johnson, Ro Wen, Talycafn, North Wales.*

PLANTS NEW OR NOTEWORTHY.

EUONYMUS YEDOENSIS.

Although Euonymus yedoensis has been known for some twenty years, it is doubtful if more than a few specimens are in cultivation in this country and the fruiting branches, exhibited from the Royal Botanic Gardens, Kew, at the meeting of the Royal Horticultural Society on August 26, are probably the first ever seen in Great Britain, for when Mr. Bean wrote *Trees and Shrubs Hardy in the British Isles* the species had never been seen in flower in Great Britain. The fruiting specimens from Kew (Fig. 330) proved that it is a fine addition to our berry bearing trees, and it received an Award of Merit.

The fruits are a rosy-pink, deeply four-lobed, and about half-an-inch across, about the size of those of E. europaeus, to which the plant is said to be allied, but the orange-coloured seeds are not so much exposed as in those of the older species. The plant is a native of Japan and forms a deciduous shrub or small tree some ten feet or so high. Mr. Bean describes it as having a flat-topped habit, stiff branches, and smooth young shoots. The leaves are obovate, minutely toothed, and strongly veined beneath. They are some two to five inches long and one-and-a-half to three inches wide. The species was named by Prof. Koehne in 1904.

There are two varieties of this new Spindle Tree, the one which is named calocarpa, has bright carmine fruits; the other, Koehneana, possesses hairy veins on the under-surface of the foliage.

TREES AND SHRUBS.

DESFONTAINEA SPINOSA.

Desfontainea spinosa is a compact-growing, stiff-habited, evergreen shrub, with glabrous foliage distinctly Holly-like in appearance. It is slow in growth, and will not outgrow its position quickly. The most suitable site for this shrub is a sheltered corner in the shrub border, screened from the early morning sun.

The scarlet, pendulous, tubular flowers are borne freely at the tip of the growths of the current season; they are one-and-a half inch long, of much substance, and remain in good condition over a long period.

During the mild winters usually experienced along the Scottish western littoral, this Andean shrub flowers continuously from August to the end of February.

CLETHRA.

Clethra alnifolia is the most generally cultivated species of the genus. It is an autumn-flowering shrub, from three feet to five feet high. In the mass it is very effective, the creamy panicles of flowers showing to advantage when environed by dark-foliaged evergreens.

The fragrant flowers are borne in terminal and axillary racemes on slender, straight, purple-tinged stems, clothed with bright, glossy leaves. The species is a native of the eastern maritime states of America from Maine to Florida, and grows freely in fibrous loam or peaty soil. C. a. tomentosa, a variety with larger flowers and later in flowering, is similar in habit to the type.

C. arborea is less hardy than its congener. There are fine trees of this species in the sheltered gardens of the Irish western littoral. Where there exists sufficient head room, it is a fine shrub for the greenhouse when planted out, growing over twenty feet high. The branched racemes of white, bell-shaped flowers in a double row are borne at the tip of the growths. When growing freely this shrub should be kept well syringed, otherwise thrips will quickly disfigure the foliage. *Fred W. Jeffery.*

CLEMATIS CUTTINGS.

Miss E. Philip Smith describes in a recent contribution to the Botanical Society of Edinburgh* means whereby Clematis may be caused to root at the nodes instead of at the internodes as it usually does. The method is simple. Several pairs of leaves are removed from the stem, and the latter is covered with black paper and kept covered for from ten days to three weeks, according to the species used. The paper is removed and the cuttings taken. As a result of the operation not only may roots arise at the nodes but rooting at the internodes is hastened. The effect of darkening is to cause a loss of starch from the living cells in the neighbourhood of the covering, and Miss Smith believes that cells freed from large quantities of starch are more apt to resume power of division than when they contain much of this food material. Plants which strike with difficulty might yield to a similar treatment, but it is to be observed that the darkening must be done before cutting the shoots off and not after.

ALPINE GARDEN

PRIMULA MARGINATA.

The beautiful Primula marginata is not nearly such a favourite as it was formerly. Any neglect is unjustified, as it is one of the most delightful of our hardy Primula species. Even if it never flowers, a good plant is delightful with its stout, pretty, leathery leaves so exquisitely margined with a narrow line of gold, and will afford much delight. This is heightened when the trusses of purple or rose flowers appear and give the finishing touch needed to complete the charm. When to these attractions is added the fact that the plant is of easy cultivation, we surely have a Primula which meets the wants of the lover of hardy rock-garden plants. It has not the gorgeous colouring or the imposing habit of some of its Asiatic rivals, but this European, Margined Primrose has enough of intrinsic beauty to commend and endear it to us all.

P. marginata is readily grown in loam and peat or leaf-mould lightened with sand, not on the level, but in chinks and seams of the rock-work, where it will grow into a gracious, pendant sheet of leaves studded with its trusses of pretty flowers. These vary very much, and we have among them blooms from pale purple to practically blue, and differing in size. The combination of lovely, gold-edged leaves and exquisite flowers is of consummate beauty.

The type plant is charming, and, in combination with other species, it has given us some delightful hybrids, such as the rare and exquisite Linda Pope, a gem of the first water.

Propagation of P. marginata is effected by division or by seeds, and plants may generally be obtained from all dealers in alpines. Those who have the opportunity of visiting nurseries or of seeing exhibits of this Primula, should select the particular one they prefer in view of its colour and size of blooms.

ANDROSACE SARMENTOSA.

Androsace sarmentosa is a most attractive species, with rosettes of silky leaves and flowers of a pretty light rose.

A. Chumbyi, which some regard as a hybrid, but which is often sold as a variety of A. sarmentosa, resembles it a good deal, but is more compact in its habit and has flowers of a deeper pink colour. It is a very attractive species or hybrid, and is greatly favoured. A comparatively new variety, named Watkinsii, may be said to be a Chumbyi with its beauties more opulently displayed. It is worth cultivating by all interested in these Androsaces, or Rock Jasmines.

Androsace sarmentosa and its varieties, if we may admit them as such, may be cultivated in full sun on a well-drained rockery in a soil composed of loam, peat, or leaf-mould, with a good proportion of grit and sand. It increases by means of new rosettes produced on runners, which may be taken off and rooted, or allowed to remain until they root themselves in the soil. In extremely wet districts A. sarmentosa may be protected from excessive rains by a sheet of glass raised a few inches above it during the winter. *S. Arnott.*

VERONICA BIDWILLII.

This very distinct Speedwell is easily accommodated in the rock garden; a well-drained, sandy loam and a sunny position are all that it requires to enable it to cover a considerable area quickly.

The light, graceful stems, partially prostrate, are clothed with very attractive glossy green leaves, but the great attraction is the generous supply of delightful little white blooms, produced on many-flowered spikes, each individual bloom resembling a tiny Campanula bell. The plant flowers over a long period: it is readily propagated from cuttings. *Ralph E. Arnold.*

---

* *Transactions and Proceedings of the Botanical Society of Edinburgh*, XXIX. 1, 1924.

INDOOR PLANTS.

BEGONIA GLOIRE DE LORRAINE.

BEGONIAS of the Gloire de Lorraine type are much appreciated during the winter owing to their beautiful effect under artificial light, the foliage in itself being highly decorative.

A warm house, having a humid atmosphere, is necessary for the successful cultivation of the plants up to the flowering stage, when slightly drier conditions are needed. These Begonias are propagated from leaves and from cuttings.

Propagation by leaves is favoured by many, as the resulting plants possess a sturdy and branching habit, and are not so prone to flower out of season as those raised from cuttings. The leaves should be severed from the plant complete with the leaf stalk, selecting only those which are matured. Insert them in a box containing about one inch of sharp sand over-lying a similar depth of peaty soil. Water them and place them in a warm propagating pit, or, failing this, use a fairly deep box and cover it with a few sheets of glass, taking care to remove and turn the latter each morning. Propagation by leaves should be carried out during December and January.

Cuttings are generally available during April. Choose sturdy shoots from the base of the plant, which will have been shortened back to about six inches above the soil level after the flowering season had ended. Leggy cuttings having a tendency to flower should not be used, and those chosen should be obtained with a heel. Insert the cuttings around the edge of a small pot filled with a mixture of loam and peat, with a liberal addition of sand. Water the cuttings and place them in a warm propagating pit. Usually the cuttings root without trouble and should be ready for potting off singly into three-inch pots by June. Pot them on as required until finally they are in pots of about six inches diameter Old stools may have the ball of soil reduced and be re-potted in smaller receptacles. Given good treatment these will make good specimens in pots seven inches or eight inches diameter. When the plants have filled their final pots with roots give the latter frequent waterings of weak liquid manure, but feeding should be discontinued when the plants are in full flower.

Up to this stage use the syringe freely, but do not wet the plants overhead when they are in full flower; continue, however, to damp the bare spaces around them. An occasional light fumigation will keep the plants free from insect pests. As growth progresses support each main stem by tying it to a neat stick, which should be left rather longer than is necessary. The tips of the stakes may be removed when the maximum growth has been made, or when the plants are required for decoration. This is a more satisfactory plan than re-staking, as both foliage and growth are very brittle. I do not practice or advocate the removal of any flowers from the plants during the growing season, as these, if given good treatment, will continue to grow up to their normal flowering season, during which it will be noticed that those clusters which appeared rather early have formed long racemes which hang well down to the pot.

Had these flower clusters been removed, as generally advised, the plants would not present that natural appearance to which they owe so much of their grace and beauty.

There are a few distinct forms of this useful Begonia with flowers different from those of the type: Mrs. Leopold de Rothschild has larger blooms of a clearer pale pink; The King, a very vigorous form; Rochfordii, with flowers approaching a red shade, and Turnford Hall, in which the blooms are white with a pale pink flush on the petals.

Charles Hodgson, Acton Place Gardens, Acton, Sudbury, Suffolk.

CULTURAL MEMORANDA.

PERPETUAL-FLOWERING CARNATIONS.

AMONGST the numerous gardeners who cultivate the Perpetual-flowering Carnation there must be many who, like myself, would be glad to exchange notes on the subject, and it is with this object in view that I pen a few of my own experiences.

My first experience with them was in a market nursery twenty years ago, where they were treated in a rough and ready manner, and yet the plants always gave good results.

Briefly, the cuttings were struck in sand in January, in heat, potted into small 60's, hardened, and planted out-of-doors in April. The site was previously occupied by old cottages which had been demolished, leaving the soil strewn with mortar rubble. This material was well worked into the bed, and the plants simply revelled in it. In September they were lifted and planted in beds on either side of a long, low market house, fine bushy plants, a delight to the eye. They were never staked, but I well remember the excellent, long-stemmed blooms that we picked, often lying on the ground, amongst weeds. The varieties were Enchantress, Mrs. Lawson, Britannia, and a dark variety named Dahlem; I believe the original cuttings came from America. I attribute the success attained at that time to the fact that they were then of recent introduction, full of the vigour of youth, and more able to withstand harsh treatment than is now the case.

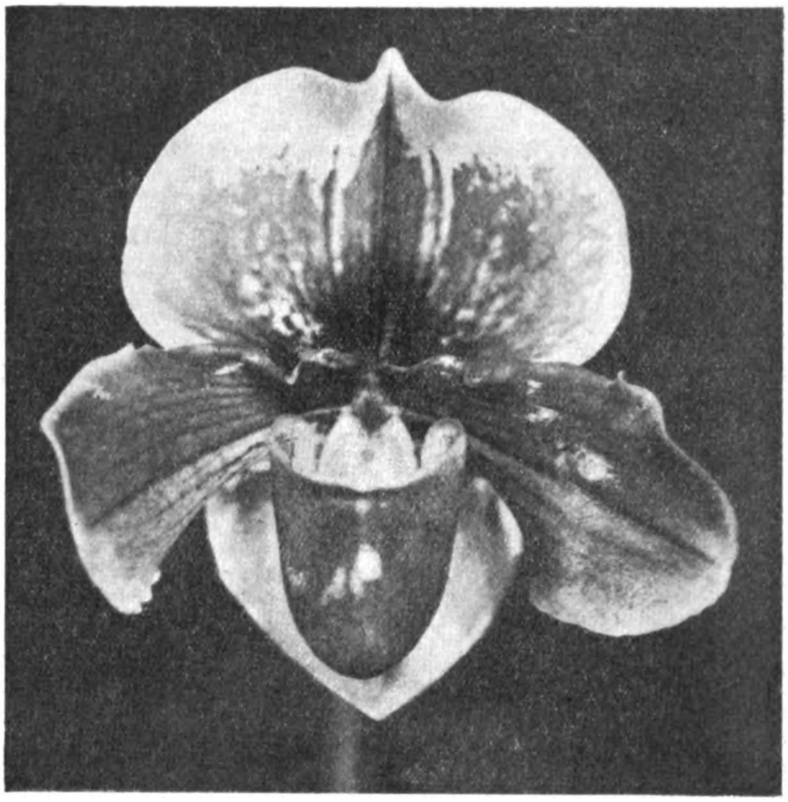


FIG. 331.—CYPRIPEDIUM CAPPAMAGNA VAR. FRED. K. SANDER.

R.H.S. First-Class Certificate, December 3 (see p. 395).

Visiting the same nursery some years after, I found the plants being carefully cultivated in pots, in a properly constructed house, and I assume the old treatment had failed to withstand the test of time.

One thing that is necessary above all others is to provide perpetual-flowering Carnations with a house to themselves.

In spring, when the pressure of work in other departments becomes almost overwhelming, the neglect of preventive measures may result in an attack of red spider, and the grower who waters his plants on Saturday evening to lessen Sunday work, will certainly be troubled with rust in his plants. Experience teaches that home-made, simple preventive remedies are as effective as expensive proprietary specifics.

Spraying with slightly salted water will check red spider, and a weak solution of permanganate of potash will kill rust in a few hours, but too strong a solution will burn the foliage.

Mr. Allwood states: "If a Carnation could speak it would say it did not like spraying," although he advocates it for controlling pests and diseases.

Coming from such an eminent authority, one hesitates to differ. Let us, however, consider for a moment that the natural habitat for any plant is in the open air, where it gets wet with rain, bathed with dews, and always subject to moist evaporations from the soil. Outdoor Carnations and Pinks never look so glaucous as after a refreshing shower, or in the early morning fresh from the humidity of the previous night. Indoor plants are robbed of the former, and do not get a fair share of the latter unless given it artificially. An excess of either is distinctly harmful and the problem is how to know the plant's exact requirements.

To quote Mr. Allwood again: "Heat and light go hand in hand." This is a great truth, but what about moisture? Unless one is continually on the spot a sudden burst of sunheat will soon leave the plants in a condition when red spider will spread on every leaf.

Syringing between the pots, and even

damping down is very beneficial, and a light spraying of the foliage, after a hot day, will give the plants an appearance to delight the eye, but the moisture in excess should be perfectly dried up before the evening.

Experience only teaches how not to overdo it, otherwise the other enemy, rust, will attack the plants. If the water is coloured once weekly with permanganate of potash crystals, this latter evil will be prevented, and as a further precaution, disinfect the walls and paths with the solution.

I have seen plants covered with rust, perfectly cleaned with a strong solution of this material, but it has a burning effect on the leaves when applied too strongly.

Shading is beneficial if not overdone, tiffany being the best material to use. If fastened on to poles like a banner it may be unrolled easily and rolled up at will.

Watering is of the utmost importance and every doubtful pot plant should be tested at least twice a day in summer and once (at midday) in winter, and it should be ascertained if one watering is sufficient to saturate the soil to the drainage.

Some plants always do better than others, under exactly the same kind of treatment, and this is due to the choice of cuttings, and the varying vigour of the parent plant. It pays to choose the cuttings carefully from only the most healthy and vigorous plants, and pure river sand is the best medium to strike them in. They root readily in this material.

The temperature should not exceed 60° or top growth will commence before roots are formed. It is not necessary to keep the plants in a close frame either, so long as they are not allowed to flag. Potted on into small 60-sized pots in a mixture of loam and a little mortar rubble, they will soon form sturdy specimens with a pot full of roots. The temperature may be lowered slightly after the cuttings are rooted.

A striking fact with Carnations at all pottings is, that the roots get well round the pot before any noticeable top growth takes place, after which the shoots grow freely. This is particularly noticeable when the plants are placed in their flowering pots, so much so that I have turned plants out to see if they liked the soil, to find a network of roots. Soon after they have made plenty of roots the flower stems will develop rapidly.

Splitting of the calyx is a bad defect, and more pronounced in some varieties than in others. Several reasons are given for this--atmospheric conditions, overfeeding, etc., and no doubt they play a part. It is noticeable, however, that the calyx splits more frequently on the side of the flower which is the least exposed to light; when the plants are grown in a lean-to house, and the stems lean towards the light, the under side invariably splits. By keeping the stems upright with equal light all round, I find that I have a lower percentage of split calyces.

A low temperature in winter will not give a regular succession of bloom, but it induces a wintering effect, resulting in very healthy plants, which will give a great display of bloom in the spring.

To keep the plants growing slowly at all times should be the aim of the cultivator, using artificial heat when it is necessary. It is essential that plenty of air should be given at the same time or weak stems will result, with relative weak plants. These Carnations should be grown in a minimum temperature of 45° with a slight circulation of fresh air. As spraying is distinctly harmful in winter, I keep rust in check by means of a mixture of slaked lime and sulphur. By dipping the hands in the mixture and clapping them vigorously over and under the plants, a fine cloud is distributed equal to that obtained by the use of bellows.

It is generally considered that the plants should be in their flowering pots by July, and autumn potting is not recommended. Having taken over a batch of backward plants this year, late in the season, I potted them into six-inch and eight-inch pots in mid-September with, at present, gratifying results; some left in five-inch pots as an experiment are not nearly so forward as those in the larger-sized receptacles. The plants should not be watered when potted late, until the soil is almost dried out; the roots will ramify in the new soil freely after affording them moisture.

Those who have the care of cut blooms in the house will notice how Carnations expand indoors in water, and it is a good plan to cut the flowers early and to place their stalks in water, even if they are not wanted immediately for decoration. Asparagus Sprengeri makes a fine setting for a vase of blooms, showing up their rich colour to perfection.

The one thing these Carnations lack in winter is scent, and it is rather disappointing, when a friend instinctively proceeds to inhale what one naturally thinks all Carnations must possess, to see a look of surprise at the almost absence of the summer Clove perfume. *Private Gardener.*

NOTICES OF BOOKS.

The Practical Book of Outdoor Flowers.

UNDER the comprehensive title of *The Practical Book of Outdoor Flowers*,* Mr. Richardson Wright, the author, has produced an equally comprehensive volume which has the appearance of being written for sheer pleasure, for he strikes an intimate friendship with the reader and the information is on the whole easily assimilated. The book is an American work, but none the less it should prove of great value to the English reader who loves his plants and attempts to make his garden part and parcel of his home life, and those who have constructive tastes will find the publication helpful. Indeed, we venture to think that the author, who is the editor of the American monthly magazine *House and Gardens*, has handled the work with the same mastery and skill that he would doubtless employ in giving advice in the detailed furnishing of the home, and just as the home may be made to express the personality of the owner, who may not be an expert in matters relating to art and furnishing, so the garden may be constructed, even if its area be small, to breathe an air of refinement in its simplicity.

The making of interesting gardens implies two factors, the first of which is generally conceded, the second seldom admitted. These are the knowledge and skill on the part of the expert gardener, who is employed to produce a result, and the taste of the owner to appreciate it when it is made.

The book has a kind of innocence and altruism which can do nothing but good so long as readers do not attempt, in their ignorance, to copy all too quickly the many somewhat lavish, but nevertheless pretty, schemes which are recommended and portrayed in the "double toned" illustrations. The first, and by far the smaller, of the two parts is devoted to the main operations in the garden; the second to the many plants and trees and shrubs which are to go to make our gardens beautiful. "The Making and Maintenance of Perennial Borders" is the title of one of the interesting chapters, and for those who want a pink, white, blue and yellow, red or orange, or lavender and grey border, good plants are recommended and cited for the rear, middle and front of the border. The author also gives a useful list of plants for a shady border and one which is in a dry spot: the mixed colour schemes are also treated with forethought. But these are just a moiety of the good things in this sumptuous volume, and while its preparation is deserving of every credit, it is a pity that more attention could not have been spared on the correct spelling of the names of plants, for we have appearing in quick succession, Aconitum lycottonum, Aster subcaerulescens, Aster alfinus, Campanula caespitora, and Eringinum, while throughout the book there are hosts of other errors of this type which might have been prevented It is also surprising to read that Crataegus Crusgalli "is used extensively in France and England as a hedge plant, both in a sheared and unsheared state."

FLORISTS' FLOWERS.

RECENTLY INTRODUCED CHRYSANTHEMUMS.

THE season is almost over when new varieties of Chrysanthemums may be expected to be forthcoming, although there is yet time for very late flowering sorts, of which there is need for improved new varieties. It is not everyone interested who has the opportunity of seeing all the novelties shown at meetings and exhibitions and the following impressions of some of this year's novelties may be of interest to readers. I fancy the numbers of new introductions have fallen short of those of last year, but there is no doubt whatever as to the merits of those that have been honoured by awards; indeed, several which did not gain awards will, in my opinion, become popular with growers. This is usually the case; and on the other hand it is not unlikely that one or two of those which gained awards may not, on further acquaintance, reach the fine form in which they were presented. An illustration will best convey what is meant. Last year a variety named Norman Davis was hailed as the most superb crimson variety of the large-bloomed section to date. From a number of sources this autumn I have heard of cultivators who have not been pleased with it.

The failure may not be due to lack of merit of the variety, but, like many another crimson sort, it does not respond to a too generous compost, nor high feeding with stimulants. The impression I gained when it was first noted is correct; it is the finest crimson Chrysanthemum growers possess—a striking, umbrella-shaped bloom: every floret develops and each puts on a velvety maroon colouring.

Taking first the big Japanese varieties, the one named Mr. T. W. Pockett is certainly the largest; it is, indeed, one of the most massive of all varieties. The earlier blooms did not impress me in the same way as later examples did; the former had so many quilled petals. The others, however, exhibited more of its true pink colour and were an advance in fine shape and appearance generally. Exhibitors are bound to be pleased with this new Australian seedling.

Stirling Stent has blooms of a neat style, rather than of gigantic proportions; the colour is rosy-pink with yellow points to the florets, and the shape of the flower is recurving. The new Mr. W. Petty has long drooping florets of a shade of bronzy-crimson, which is not especially new. The blooms of Nan Luxford remind one of the variety Sir E. Letchworth, when the flower comes closely incurved.

Mr. T. Slack is, like a few others that follow, one of last year's novelties, but all have been noticed in good form this season. It is of crimson colour, fading when the bloom is fully out. The bloom is shapely, of very large size, and effective for exhibition. It is possible that the variety J. Symonds has not yet been seen at its best: the style of flower as well as the Primrose shade show considerable possibilities.

---

* *The Practical Book of Outdoor Flowers.* By Richardson Wright. pp. 319 with eleven Illustrations in colour, 163 in double tones and four plans. J. B. Lippincott and Co., Adelphi, W.C.2. Price 35s. net.

Sulphur Queen may be likened to the yellow form of the well-known Wm. Turner, named Mrs. H. Tysoe, but it is surely the easier to grow and therefore an acquisition. The green-tinted white Mrs. Harold Wells is considered much better than the well-known Mrs. M. Sargent, inasmuch as the new sort is the more readily produced in good form. In all save colour of bloom this Chrysanthemum resembles the popular Mrs. R. C. Pulling. Gigantic is equal to all the good things which have been said of it. The few growers who have had another year's experience of this variety regard it as a pink "Drabble"; cultivators of big blooms will require no better description. It is a seedling from that remarkable sort.

The double-flowered kinds, which give blooms smaller than the exhibition varieties and consequently more useful generally for decorations, provide the best material for the market grower. In their rich colouring, freedom of growth and flowering, some of the newer sorts of this type are superb. Aldyth has full, well-shaped blooms of marketable size and of a pleasing bright shade of crimson. Gloriosa is a rich shade of golden, or bronzy-amber; the flowers are nicely formed with recurving petals. The growth of the plant is excellent and most prolific in flowering. Harmony provides a new and striking shade of colour -coppery-red, or orange-red, and when the bloom is opening the tone is especially rich. As the plant is of ideal habit, and with small foliage, it seems well adapted for decorative uses. The lasting qualities of the blooms when cut are also in its favour. Lynette is a white variety. The flowers, as noted, are on the large size, and therefore these are likely to be in demand as specimen blooms. The petals recurve and form blooms of faultless shape. This new sort is not unlike Autocrat, and it will be interesting to watch if it proves an improvement on that very popular Chrysanthemum.

Sunburst not only gives a distinct shade of colour—salmon-pink fading as the blooms get old—but is a very perfect type of the graceful hanging-petalled flower. The colour is especially beautiful in artificial light. The plant is exceptionally prolific and the foliage small. The Wizard was obtained from, and is really a form of Sorcerer, but of richer and deeper colouring. The type is much favoured as a market variety, and the newcomer will not be less popular with trade growers.

The singles are, undoubtedly, gaining in importance, and now-a-days they take up about half the space of an exhibition, and apparently the general public find in them most admirable qualities. The time is at hand when some kind of classification in this type is desirable; I mean the better market sorts might be kept distinct from those suitable for competitive purposes. At any rate the first four to be described, and which have been honoured with Certificates of Merit, appear to be first-rate for the former purpose on account of their stiff florets and nice colours. At the same time the blooms might not come large enough for show purposes. My notes on Eleanor refer to it as being like Absolute, a variety in commerce; but small. The latter remark applies also to Envy, which, however, has more yellow colour in it than the probable parent, Challenger, more of the crimson, and is larger; Mrs J. Barrell is distinct in having a ring of yellow near the centre or disc. This last was my fancy of the four. Ennismore has rich crimson blooms with gold pointing, not unlike the old Sandown Radiance, and they are big and showy. Annette gives a pleasing combination of bronze over yellow; this sort is excellent in shape and of medium size. Gorgeous is rich deep crimson, and the flower is elegant in its formation. Sheila, too, is crimson-red of lighter hue than the last, and is a striking sort for exhibitions. Notwithstanding the number of good white sorts the new incurved White Model is a charming novelty. The pink sort named Hon. Edith Smith is somewhat flimsy, but the size and attractive shade are very pleasing. Laddie, yellow, is a decided gain. The colour is dense, the shape of blooms most correct, and the substance of the florets exceptional. Sportsman is a flower remarkable for both large size and substance, the general shape of the bloom also being good. The colour is orange-red fading to terra-cotta as the bloom ages. *H. S., Woking.*

PUBLIC PARKS AND GARDENS.

Mr. George Woollard, who has had charge of the gardens attached to St. Paul's Cathedral, has retired after a period of over forty years service. Mr. Woollard is sixty-eight years of age and is retiring on a pension. He has made many friends during this long time among those who visit the gardens from the city offices adjacent, and they include some who once were office boys and are now managers, directors and proprietors. A gentleman amongst these, who presented him with a walking stick on the day that King George was crowned, made him the presentation of an umbrella on the 27th ult. as a farewell gift.

The Town Council of Greenock has decided to proceed with a scheme of improvement of the Well Park at an estimated cost of £2,000.

Fourteen new tennis courts and two bowling greens are to be constructed for public use by the Town Council of Huddersfield.

The proposal for a park at Solihull, Birmingham, has been turned down by the parishioners. It will be remembered that the Council proposed to purchase thirty-five acres of land fronting Warwick Road for the purpose of a public park, but a poll of the ratepayers resulted in 842 being in favour of the scheme and 2,504 against.

The Urban District Council of East Barnet has concluded negotiations for a loan of £1,500 for the provision of tennis courts, bowling green, etc., at the Victoria Road Recreation Ground.

The provision of a recreation ground at Goldenhill has been considered by the Stoke-on-Trent Corporation Parks and Cemeteries Committee and instructions have been given to the Town Clerk to ascertain upon what terms a certain piece of land could be obtained, and to the Borough Surveyor to present an estimate for the cost of laying out the land.

The Estate Committee of the Corporation of Leicester has recommended the purchase of sixty-one acres of land at £12,500 for permanent allotments and other purposes.

The Urban District Council of Annfield Plain has decided to acquire the northern slope of Pontop Pike for a recreation ground.

The London County Council is considering the sanction of a loan of £358 to the Hackney Borough Council for laying out Clapton Square as an open space.

A proposal is on foot to acquire over thirty-four acres of ground for an extension of the park at Seven Kings.

The Sowerby Bridge Urban District Council has under consideration a proposal to construct a number of tennis courts in Sowerby New Road, provided the Ministry of Health will sanction the use of land which was originally bought for a cemetery-extension scheme.

The Town Council of Dunoon has agreed to expend £1,000 on the formation of a second bowling green.

Blaydon Urban District Council is asking the Ministry of Health to sanction a loan for the purchase of Shildon Farm for recreation purposes.

Hard tennis courts are to be provided on an open space acquired by the Hendon Urban District Council at Princess Park Avenue, Golders Green.

The Urban District Council of Clacton has adopted an estimate amounting to £5,900 for improvements to the cliffs and greensward, including the provision of shelters, fencing and tar-paving work.

Mirfield Urban District Council has received sanction to borrow £415 for the laying out of tennis courts at the Memorial Recreation Ground.

NURSERY NOTES.

CHRYSANTHEMUMS FROM SEEDS.

The treatment of the Chrysanthemum as an annual, i.e., raising it from seeds and flowering it within the year, is no new method, indeed Chrysanthemum enthusiasts follow the practice year after year for the purpose of obtaining new and improved varieties; when success follows their efforts the novelty is increased vegetatively. It is something new, however, to treat Chrysanthemums as annuals for the provision of cut blooms during November and for decorating the conservatory and greenhouse during the same period. For such purposes a good strain is essential as no one would raise plants from seeds a second year if the experience of the first was an unhappy one.

For about five years Messrs. Sutton and Sons have been busily engaged in perfecting a strain of Chrysanthemum suitable for the purpose suggested and already have achieved a very large measure of success. In the firm's nursery at Reading one large house contains about a thousand plants, all from seeds sown in March. These were in bloom throughout November, and even so late as early December the display was a brilliant one. The strain is single-flowered, and for the present the Reading firm is confining its special attention to this section. The plants range in height from two feet six inches to four feet six inches, and although they show a diversity of habit and foliage, all have a branching habit and flower freely. The colour range is a wide one, from the purest of white blooms, through blush, pink, mauve, cream, canary, golden-yellow, fawn, buff, terra-cotta, orange, rose, red, and Chestnut to deep crimson. The diversity of form in the flower adds interest to the display; in some instances the flowers are as regular and circular as the keenest florists could desire; in others there is an elegant lightness which marks them out for cutting. In certain blooms the florets stand out stiffly, in others they reflex gracefully, and in others there is a quaint and interesting tendency to recurve. Even the few quill-petalled flowers are beautiful, but these are not willingly perpetuated.

This demonstration of the treatment of November - flowering Chrysanthemums as annuals—and it is a serious and excellent demonstration—is very suggestive of future possibilities. We noticed that a certain Chestnut-red variety, with yellow zone round the modest disc was prevalent, and also that an orange-tinted yellow variety was largely represented. We were informed that these varieties are regularly reproduced in the Reading strain, therefore it does not appear unlikely that in the years to come Messrs. Sutton and Sons may be able to offer Chrysanthemum seeds in a number of distinct colours, with a guarantee that a high percentage will come true. Several years must elapse before this ideal is achieved, but after noting the tendencies mentioned above and remembering what Messrs. Sutton and Sons have accomplished with Primulas, Cyclamens, Clarkias, Nemesias, and other flowers, the prospect of securing strains of November-flowering Chrysanthemums which shall come true from seeds seems a fair one.

Although the fine display at Reading has resulted from seeds sown in March, Mr. Janes, the capable grower, is of opinion that if seeds were sown in a greenhouse in February, the results would be more satisfactory. After the seedling stage has been passed, the plants should receive cool treatment, indeed, they should remain out-of-doors for a large part of the season, as in the case of plants raised from cuttings. No stopping or pinching is required, nor is disbudding desirable, indeed disbudding would spoil the elegant effect produced by the branching sprays of bloom, which are a feature of the strain. Given reasonable attention from seed-sowing to flowering, the Sutton strain will give every satisfaction.

VEGETABLE GARDEN.

THE EGG PLANT.

The Egg Plant or Mad Apple is Solanum Melongena. Linn.: Melongena spinosa Tourn. Inst. 151. It is known to the French as Aubergine, and by Germans as Eierfrüchte.

It is a tender annual, native of India, and has been known in this country for nearly four centuries, having been contemporaneous with the Golden or Love Apple which came to us from South America towards the end of the 16th century.

Those who are acquainted with the Egg fruit hold it to be good and pleasant food, yet it has not attained the popularity of its more highly esteemed, but more acid and less nutritious western rival which in North America has become a favourite dish of the whole people.

The reason for this lack of appreciation is not very apparent. It can hardly be difficulties of culture, for the plant may be grown in the same manner and quite as easily as the Tomato. Justice, 1754, informs us "that having raised his plants in a hot bed and grown them on until June," he "having a bed of good rich earth in a warm situation of the garden, planted them there, and as soon as their fruits appeared gave them plenty of water, &c., &c."

Sixty years ago, a friend of the writer who lived in a villa with a small garden and greenhouse at Romford, grew them to perfection, and was in the habit of carrying round some of the fruits in his pocket trying to induce his friends to take up the cultivation of the plant, but met with very little success. Having personally tested the fruits I found them excellent in every respect when cut into slices, fried in Olive oil, or butter, and served hot. Mr. E. Beckett, in our day, has grown them most successfully, and describes his methods of cultivation in *Vegetables for Home and Exhibition.*

It is possible that the name universally given to this fruit may have had a prejudicial effect on its adoption. Dodonæus, who figures a complete plant in fruit in Book XIV of his *Stirpium historiae* gives the Latin name as Mala insana, and the Flemish name as Dulle Appelen, both of which names are in plain English, "Mad Apple." The reason why such a name was given is not very clear, but as Miller states in his *Dictionary,* 1759, "the fruits are supposed to have the property of provoking lust," that may possibly be the origin of the name, for "unbridled lust is one of the worst forms of insanity."

The exact botanical position of the plant appears to have caused some trouble at the time that Linnaeus propounded his new system of botany. Miller thus deals with the subject:—"Dr. Linnaeus has joined this Genus (Melongena) and the Lycopersicum of Tournefort, to the Solanum, making them only one species of that Genus; but as the Fruit of this Genus has but one Cell, so it should be separated from the Solanum whose Fruit have two Cells, and of which there are so many species already known that there cannot be any addition of plants that can be separated with propriety."

Respecting the origin and name, Miller, who describes four varieties, follows Tournefort's system, and classes them as Melongena, thus: "The first sort (Oval Violet) grows naturally in Asia, Africa, and America, where the fruit is commonly eaten by the inhabitants. It is cultivated in the Gardens in Spain as an esculent Fruit; the Turks also eat the Fruit, and the Italians, and the Inhabitants of the British Islands in America (?) call it Brown John, or Brown Jolly." As there is a variety named Brinjal, these latter names are likely to be corruptions of it.

"These plants," Miller states further on, "are only preserved as Curiosities in English gardens, the fruit being seldom eaten in this country, except by some Italians or Spaniards who have been accustomed to eat them in their own country."

The list of varieties has lengthened since Miller's day, but it is hardly necessary to give it in full at this time. As usual, many of the names are merely synonyms, and other varieties are of little use. In the hope that some readers of these notes may be led to attempt the culture, the following list of varieties likely to succeed, and be appreciated, in our climate, is appended.

Long Purple, original strain, fruit very dark purple, seven inches long, of excellent quality.

Barbentane, very early, long, purple; fruit almost cylindrical, seven inches to eight inches long by two inches in the thickest part; colour almost black; very early and productive.

Early Dwarf Purple, fruit ovoid, about four inches long, ripening one month earlier than other kinds.

New York Improved, a spineless variety with very large, solid, spherical fruits of exceptional quality. The favourite American variety.

Chinese Brinjal, or Long White Chinese. A long, slender, slightly curved, late white variety, of a quality fully equal to the purple varieties.

As the Egg plants are valuable for decorative purposes, I give the following kinds as being suitable for this use:—

Solanum ovigerum, a white, egg-shaped fruit, that turns yellow as it matures. Scarlet Egg Plant, which produces a fruit very similar to that of a rather small, smooth scarlet Tomato.

Solanum texanum, a very striking scarlet fruited variety, exhibited in grand form at Vincent Square by Mr. E. Beckett in 1922. The fruits of these three varieties are not edible. *S. B. Dicks.*

ONION EXCELSIOR.

The interesting article by Mr. S. B. Dicks on the nomenclature of Onions (p. 359) induces me to relate the full story of the origin of the above-named variety as told me by the late Mr. John Cranston some twenty-five years ago.

Mr. J. Cranston was then living at Fownhope, a village about seven miles south-east of Hereford. He informed me that his son, an engineer, had an appointment in Portugal, and in the particular district wherein his duties lay, he became a boarder with a Portuguese farmer of Onion fame. This gentleman offered Mr. Cranston, jun. a case of Onion bulbs as a present to his father, which was accepted and sent to the King's Acre Nurseries, at that time belonging to Mr. John Cranston.

For three seasons a similar present was sent and much appreciated, the bulbs being very fine specimens. The third season Mr. Cranston had a quantity of the bulbs planted in the nursery, which in due season seeded. The seeds were sown and resulted in some large-sized bulbs being grown.

Mr. Cranston at once recognised this particular variety as being useful, made arrangements with the Portuguese gentleman to favour him with a quantity of seeds for sale, and proceeded with the same until his severance with his house, which had been in the family for over a hundred years.

To continue the story; a supply of seed was sent to Scotland, and so far as authentic information is given, was sown and grown at Ailsa Craig, a place noted for fine vegetable products, hence its second name.

Mr. Cranston, just before leaving the business, gave orders to his clerk, Mr. Peeke, to cancel orders for supplies, when Mr John Wilson, the highly respected seedsman of Hereford, picked up the contract, and has been first and foremost with the great prizetaker, Cranston's Excelsior, ever since, his firm continuing its reputation as dealers in seeds of this remarkable Onion.

Mr. Wilson's annual show is one of great merit, many specimen bulbs of the noted strain being shown in perfect shape and finish at three pounds weight, the largest and finely finished specimens coming from gardens near the sea shore, where sea-weed is used as a manure. *Pomona.*

FRUIT REGISTER.

PEAR COMTE DE PARIS.

This very distinct Pear was exhibited by Messrs. George Bunyard and Co. at the meeting of the Royal Horticultural Society on the 2nd inst, and attracted the notice of the Fruit and Vegetable Committee, as it did not appear to be generally known to the members. The fruits are almost as large as those of Pitmaston Duchess and taper somewhat at the end like Glou Morceau. The skin is usually of a light grey colour, such as is found in the variety Conference, with patches of russet and an orange blush on the side next to the sun.

The specimens exhibited were grown under glass and were in a condition for the dessert table, so that from trees in the open it would be available for use late in December. Hogg describes the flesh as yellowish, rather gritty, juicy, brisk and sweet, with an aromatic flavour. In Mr. Bunyard's opinion it is a variety worthy of cultivation, and those who are desirous of adding to their collections may be advised to include a tree of this old, but little known variety.

APPLE LAXTON'S SUPERB.

The Northern Apple Culture Society draws the attention of its members to the value of this new dessert Apple for northern growers. This variety was shown by members residing at Stacksfield and Whickham, at the Conference held by the society at the Farmers' Club, Newcastle-upon-Tyne, on October 31 and November 1, and the following remarks on the variety have been issued by the Committee :—

"The Committee desire to draw very special attention to this new seedling which they consider to be the best raised since the raising of Cox's Orange Pippin one hundred years ago, and more especially since it is evident that it has the special merit of being suitable for growing to a proper size, colour and flavour in our northern climate. It is a great cropper (needs thinning); hangs well on the tree. It is sweet and aromatic and of a juicy, melting quality. Its flavour resembles Cox's Orange Pippin. It is, when grown in the North, considerably larger than Cox's Orange Pippin, and is at its best from Christmas to March."

HOME CORRESPONDENCE.

Big-Bud Mite Attacking Hazels.—About ten to fifteen years ago I found big-bud on a wild Hazel in a hedge to the south of Dorking, and then looked up the records to see if it had any connection with the familiar old enemy. The symptoms were similar in both cases, but no writer on the subject seemed to regard the two mites as the same species. In 1881 the late Miss Ormerod in her *Manual of Injurious Insects*, quoted the mite of the Black Currant as Phytoptus ribis, and that of the Filbert as Calycophthora avellanae. In her *Handbook of Insects Injurious to Orchard and Bush Fruits* (1898), she adopted Phytoptus avellanae as the name for the mite of the Hazel and Filbert, just described as a new species by Dr. A. Nalepa. Some years before this she stated the galls were numerous on Hazels in a hedge near St. Albans. Edward T. Connold in his book on *British Vegetable Galls* (1901), p. 126, plate 47, described and figured the big-bud of the Hazel as Eriophyes avellanae. Nalepa. The specimens described were gathered by him near Hastings, so that the mite has a fairly wide distribution, although not very abundant nor troublesome so far. In every case the writers state that the attacked Hazels were in sheltered places, usually overhung by trees, and the Filberts had been in similar situations and neglected. There are many species of Eriophyes, but different species confine their attention to one or two closely related plants, so that W. E. Harper (p. 393) may take it for granted that the Black Currant bush became attacked in the usual way, unless it can be proved that the mite can readily change its character and habitat. *J. F.*

Young Gardeners of To-day.—*A. G.* (p. 377) seems to be a person of peculiar ideas. He suggests that head gardeners neglect to instruct their young men and then proceeds to condemn the suggestion by an illustration to the contrary. Gardeners are accused of neglect because the men are not taken away from work to watch a special operation in progress. In most establishments the staff is so small that neither the head gardener nor the foreman can spare the time for such methods, but I do believe that most head gardeners do all in their power to help those under them to climb the ladder of success. Regarding the visits of young men to the kitchen garden for educational purposes, does *A. G.* realise that under-gardeners want relaxation from work? Is it not enough for a young man to do a day's work, and his duty (if it is "his turn on"), without prowling round the kitchen garden at night? The real remedy is that all under-gardeners should endeavour to serve in each department in turn; that, and no other, is the way to become a successful gardener. *Clarence G. R. Smith, Deanery, York.*

SOCIETIES.

ROYAL HORTICULTURAL.

Rose Trials at Wisley.

The special Committee appointed by the Council of the Royal Horticultural Society to judge the Roses under trial at Wisley has now reported the results of its first year's visits. The Committee consists of the President of the Society, the Rt. Hon. Lord Lambourne, V.M.H., Chairman (Mr. W. Cuthbertson, V.M.H., acting in his absence), Mrs. Wightman, Dr. Lamplough, Dr. Williams, Messrs. J. Coutts, R. H. Darlington, Alex. Dickson, jr., W. Easlea, T. Hay, E. J. Holland, G. Prince, Poulsen, Pernet-Ducher, W. E. M. Taylor and N. L. Wettern.

The Special Committee met several times at Wisley during the year and assessed the garden value of the Roses on each occasion. They have to point out, however, that no awards are recommended until a Rose has been growing in the gardens for at least two years, and that some varieties which will doubtless attain the highest award in future years are recommended here a lower award or altogether omitted because they have not been seen at their best on the occasions of the Committee's visits, or have not been sufficiently long in the trial garden to enable the Committee to come to a considered judgment of their behaviour there.

It should be noted that judgment is based solely upon the behaviour of the Rose in the garden; it is judged from the standpoint of its value for garden decoration. The Committee wish it to be clearly understood that the omission of a Rose from the award list on this occasion is not to be taken as condemning it as a garden Rose.

The Council of the Royal Horticultural Society has instituted a special award for Roses adjudged of value in these trials to be called the Wisley Rose Award. It is of two grades, viz.:—Class I. and Class II. (see below).

Awards.

The following awards have been made to Roses by the Council of the Royal Horticultural Society, after trial at Wisley, in 1924.

Double and Semi-Double Varieties.

Class I.—Hawlmark Crimson, Messrs. A. Dickson and Sons, Newtownards; Christine, Messrs. S. McGredy and Son, Portadown; Red Letter Day, Messrs. A. Dickson and Sons; Mrs. Wemyss Quin, Messrs. A. Dickson and Sons; Betty Uprichard, Messrs. A. Dickson and Sons.

Class II.—Lady Pirrie, Mr. Hugh Dickson, Belfast; Lamia, Messrs. W. Easlea and Son, Leigh-on-Sea; Madame Jules Bouché, raised by Mr. J. Crobier and sent by Messrs. A. Dickson and Sons; Mrs. Bryce Allan, Messrs. A. Dickson and Sons; Mrs. Hornby Lewis, Mr. Elisha Hicks, Hurst; Miss Dorothy Mocatta, Mr. F. Spooner, Horsell, Woking; Mrs. C. V. Howarth, Messrs. A. Dickson and Sons; Chrissie Mackellar, Messrs. A. Dickson and Sons; Bedford Crimson, Messrs. Laxton Brothers, Bedford.

Dwarf Polyantha Varieties.

Class II.—Crimson Orleans, Messrs. Laxton Brothers, Bedford; Edith Cavell, introduced and sent by Messrs. W. Cutbush and Son, Barnet; Yvonne Rabier, raised by Mr. Turbat, Orleans, and sent by Messrs. W. Cutbush and Son; Mrs. W. H. Cutbush, raised by Mr. Levasseur and sent by Messrs. Cutbush and Son.

Single Varieties.

Class II.—Pink Delight, Messrs. Laxton Brothers, Bedford.

Trial of Endives.

The following awards have been made to Endives by the Royal Horticultural Society, after trial at Wisley :—

Awards of Merit.

Green Curled Winter, and Summer Curled both sent by Messrs. R. Veitch and Son; *Early Parisian Summer*, sent by Messrs. Barr and Sons.

Highly Commended.

Broad-leaved Batavian, sent by Messrs. W. A. Burpee, U.S.A.; Batavian Green, sent by Messrs. Nutting and Sons, Ltd.; Batavian Hardy Green Winter and Queen of the Winter, both sent by Messrs. Barr and Sons; Emerald Gem, sent by Messrs. Ed. Webb and Sons; Staghorn, sent by Messrs. Barr and Sons; Ruffec, sent by Mr. Thos. Cullen; Olivet Curled, sent by Messrs. Barr and Sons; Longstanding, sent by Messrs. R. Veitch and Son; Longstanding Carmes, sent by Messrs. Barr and Sons; White Heart, sent by Messrs. Ed. Webb and Sons; White Curled, sent by Messrs. W. A. Burpee and Messrs. Nutting and Sons, Ltd.

Commended.

Pancalier, Louviers, and Paris Market, these three sent by Messrs. Barr and Sons; Fine Green Curled, sent by Messrs. Ed. Webb and Sons.

SMITHFIELD CLUB.

Although the Smithfield Show, which is being held throughout the week (Dec. 8 to 12) at the Agricultural Hall, Islington, is mainly of agricultural interest, there are, nevertheless, many exhibits which are of horticultural value. It is the generally accepted opinion that prices of seed Potatos for the coming season are fixed at this show, and Scotch firms were much in evidence with displays of their produce. There is undoubtedly a scarcity of seed Potatos, not because the crop at lifting time was much below the average, but because the effects of blight have made a serious inroad into the supplies and has accounted for great loss in the "graves." Prices as a rule are about fifty per cent. higher than they were this time last year.

Of the many firms showing Potatos Messrs. Fidler and Sons had a comprehensive display of tubers arranged with good effect and in quantity. Some of the most important varieties shown were Resistant, Snowdrop, Epicure, Harmony and Majestic amongst white-skinned varieties, and Edgecote Purple. Sutton's Flourball, Arran Victory, and Kerr's Pink were coloured varieties of merit. Mr. A. Findlay showed some very promising new immune varieties, including the second early Norma, a blight resister: Gigantic, an early variety introduced for the first time and which, in addition to passing the Wart disease test at Ormskirk, cropped heavily in the trials: and Celt, a white, round, maincrop variety. Arran Consul, a new maincrop variety, was shown in the collections from Messrs. W. J. Reid and Co. and Messrs. Isaac Poad and Sons, while other exhibitors of Potatos were Messrs. Pattulo, Higgs and Co., Ltd., Mr. W. Robinson, Messrs. Wotherspoon, Donald and Graham, Ltd., Messrs. G. Cooper and Son, Ltd., Mr. W. J. Campbell, Messrs. W. Dennis and Sons, Ltd., Mr. John A. Grant, Mr. Thos. McClung, Messrs. Powrie Bros., Messrs. R. W. Green and Co., Messrs. R. and S. Paton, Messrs. W. and A. Graham, Mr. James Gardiner, Messrs. Kent and Brydon, Messrs. Little and Ballantyne Mr. F. L. Anderson, Messrs. G. White, Ltd., Messrs. Robt. Morris and Son, Ltd., and Mr. G. R. Sharpe.

In addition to a display of Potatos, Mr. James A. Scarlett, showed magnificent bushes, two and three years' old, of Edina Black Currant, a variety which is highly resistant to big-bud, and gives heavy crops of large-sized fruits. Specimens of Dalkeith Brussel Sprouts and Ormskirk Late Savoy were also exhibited.

Messrs. J. Carter and Co. had a magnificent group of agricultural roots, such as Swedes and Mangels, and the varieties were signified by electrically illuminated signs. Attention was also directed, by means of large photographs and posters, to a new Pea named Giant Stride, claimed to be the largest podded, dwarf-growing variety in the world. Potatos, Leeks, Onions, Celery, and other vegetables were also included in this very excellent display.

Messrs. Sutton and Sons likewise made a feature of agricultural roots. At one end of the exhibit were neatly-arranged displays of vegetables, chief of which were Christmas White and Winter Mammoth Broccoli, Best of All, and Winter Beauty Tomatos, Sutton's Fillbasket Brussel Sprouts, Onions and Potatos in variety. Grasses, Clovers, and other herbage crops were also shown, and a plant-breeding exhibit, the object of which was to demonstrate the marked difference in feeding value obtained by single plant selection as against the old mass selection method.

Messrs. E. Webb and Sons, Ltd., were responsible for a large group of agricultural roots, seeds, and vegetables, the last-named including fine specimens of Prizewinner Carrot, Marrowfat Parsnip, Reliance Onions, and Potatos in variety.

Messrs. Harrison and Sons showed their XXX Brussel Sprouts in company with other vegetables, seeds, and agricultural roots, and other displays were made by Messrs. E. W. King and Co., Messrs. Toogood and Sons, Ltd., Mr. H. J. Speed, Messrs. Cannells and Co., Mr. Alex. Blatchford, Messrs. John K. King and Sons, and Messrs. Garton's Ltd. The only display of Apples was shown by Messrs. Seabrook and Sons, and they exhibited the chief commercial varieties of dessert and culinary sorts. Of outstanding merit were the varieties Cox's Orange Pippin, Lord Derby, Reinette du Canada, Ellison's Orange, and Bismarck.

Messrs. Dickson and Co. exhibited grass seeds in bulk and specimens of dried grasses, and Messrs. J. and G. H. Mathews also had an exhibit of vegetable seeds. There were also many displays of manures, both for agricultural and horticultural use, and insecticides and fungicides together with other horticultural sundries were freely shown.

BRITISH FLORISTS'.

For some time past the Market Committee of the British Florists' Federation has had under consideration the subject of extending the open hours of the Market from 9 a.m. to 10 a.m. It appears that a number of standholders were of opinion that such an extension of time would mean a material increase in business. Several incidental matters had to be considered and when these were cleared up all the standholders in the Flower Market were circularised and asked to state (1) whether, in their opinion, an additional hour would mean an increase of business and (2) the number of stands they held.

The replies received showed that twenty-six standholders, representing 78 stands, were in favour of the suggested extension of time; whilst seventy-one standholders, representing 192 stands, were against the suggestion. Forty-three standholders, representing 98 stands, did not vote. With such a large majority against the proposal the B.F.F. does not propose to proceed further with the matter.

Obituary.

William Browne, M.V.O., I.S.O.—It is with with much regret that we announce the death of Mr. William Browne, M.V.O., I.S.O., who passed peacefully away at the age of eighty-six on November 21 last at Brighton, where he had resided since his retirement twenty-one years ago. Mr. Browne held the important position of Superintendent of St. James's Park, the Green Park, Hyde Park and Kensington Gardens, the Royal Gardens at Buckingham Palace and Marlborough House, and retired from the public service in February, 1903. A native of Mansfield, Nottingham, he was educated at the local grammar school and after leaving school acquired a knowledge of the nursery and seed business in his father's nursery. He entered Kew as a student gardener, and left Kew in 1880 to enter the service of Messrs. Milners, landscape gardeners. He laid out the Alexandra Park, Manchester, following which he was appointed the Superintendent of that park. He was appointed Superintendent of Hampton Court Gardens some few years later and was transferred to Regent's Park in 1873, where he remained until he was appointed to Hyde Park in 1882. Many improvements were carried out by him during his charge of the Royal Parks. At the times of great national rejoicings, such as Queen Victoria's Diamond Jubilee and the Coronation of King Edward VII., great responsibilities devolved upon him. In acknowledgment of his services on the former of these occasions, Queen Victoria awarded him a Jubilee medal, and from King Edward he received a Coronation medal. His Majesty took great pleasure in the parks and gardens, and particularly in the alterations and improvements in the gardens and lake of Buckingham Palace, which Mr. Browne superintended soon after King Edward succeeded to the throne. It was in recognition of these services that His Majesty granted him the silver medal of the Royal Victorian Order. Mr. Brown was an expert in landscape work; of superior attainments, much esteemed and greatly respected by all who knew him.

R. Irwin Lynch.—With very great sadness and regret we have to record the death of an old and valued collaborator, Mr. R. Irwin Lynch, V.M.H., at Chelston, Torquay, on December 7. A native of Cornwall, Mr. Lynch was born at St. Germans in 1850, and at the early age of seventeen he entered service at Kew. Here his ability was such that he became in turn foreman of the Herbaceous Department and the Tropical and Propagating Departments. This last position he held until 1879 when, on Sir Joseph Hooker's recommendation, he was appointed to succeed Mr. Mudd as Curator of the Cambridge Botanic Garden; he held this important position until his retirement in 1919. Mr. Lynch was not only a successful cultivator; but he was a botanist of no mean order, and possessed considerable organising ability. He made Cambridge Botanic Garden famous for its interesting plants and for the skill with which these were grown, and he found time to make a special study of several important subjects. His *Book of the Iris* was the first popular and accurate book on a now popular subject. His knowledge of the Cineraria family was unique, as shown by his paper on "Hybrid Cinerarias" which appeared in the *Journal* of the Royal Horticultural Society in 1900. In the same year he contributed to the R.H.S. *Journal* a treatise on the "Evolution of Plants," and on another occasion he presented a new "Classification of the Genus Paeonia." All these works were botanically accurate, but, as in all his writings, he aimed at interesting and instructing the gardener rather than the botanist. Of kindly disposition, with a cheery and modest manner, Mr. Lynch so endeared himself to all lovers of plants that those who possessed rarieties delighted in sending him specimens, and it was because of his singular charm of manner and the extreme care he took of all gifts of plants and seeds that Cambridge Botanic Gardens came to be second only to Kew, in England, for its fine and well managed collection of plants. Another splendid trait in our late friend's character was the great interest he took in the young men who served under him during his long tenure of the Curatorship at Cambridge; no one who showed ability and ambition lacked encouragement, and there are to-day many men occupying good positions in the horticultural world who will hold his memory dear because of the advice and encouragement he gave them when these were most needed. The authorities at Cambridge showed their appreciation of Mr. Lynch in 1906 by awarding him the Honorary Degree of M.A. "in recognition of services rendered to Botanical science in the University as Curator of the Botanic Garden." In 1908 the Royal Horticultural Society awarded Mr. Lynch the Victoria Medal of Honour in Horticulture, and five years previously he was awarded the Veitch Memorial Medal in recognition of his work as a practical horticulturist. In 1907 he was President of the Kew Guild. In 1919, after forty years service, Mr. Lynch retired from the Curatorship of the Cambridge Botanic Gardens; for some time previously he had not enjoyed good health, and his friends hoped that in his retirement at Torquay he might become stronger physically and enjoy many years of quiet happiness. Unfortunately, these hopes were not realised, and latterly he had become very weak in body, though still alert in mind, for his keen powers of observation continued to the end.

Professor A. N. McAlpine.—We regret to announce the death of Mr. A. N. McAlpine, Professor of Botany, at the West of Scotland Agricultural College, which took place at his residence, Glasgow, on Tuesday, December 2. He was a most popular demonstrator and was one of the best known figures in educational circles in Scotland. Deceased was the only remaining member of the original staff of the college, which attained its majority this year, and was associated in its early career with Sir Robert Wright and Professor Drummond of the Kilmarnock Dairy School. Under his tuition botany became a live and engrossing subject. Always picturesque and racy in his language, Professor McAlpine had a habit of describing the characteristics of grasses and plants as though they were human beings and in this way he succeeded in impressing knowledge upon the minds of students with a directness that a less original teacher would not have achieved.

ANSWERS TO CORRESPONDENTS.

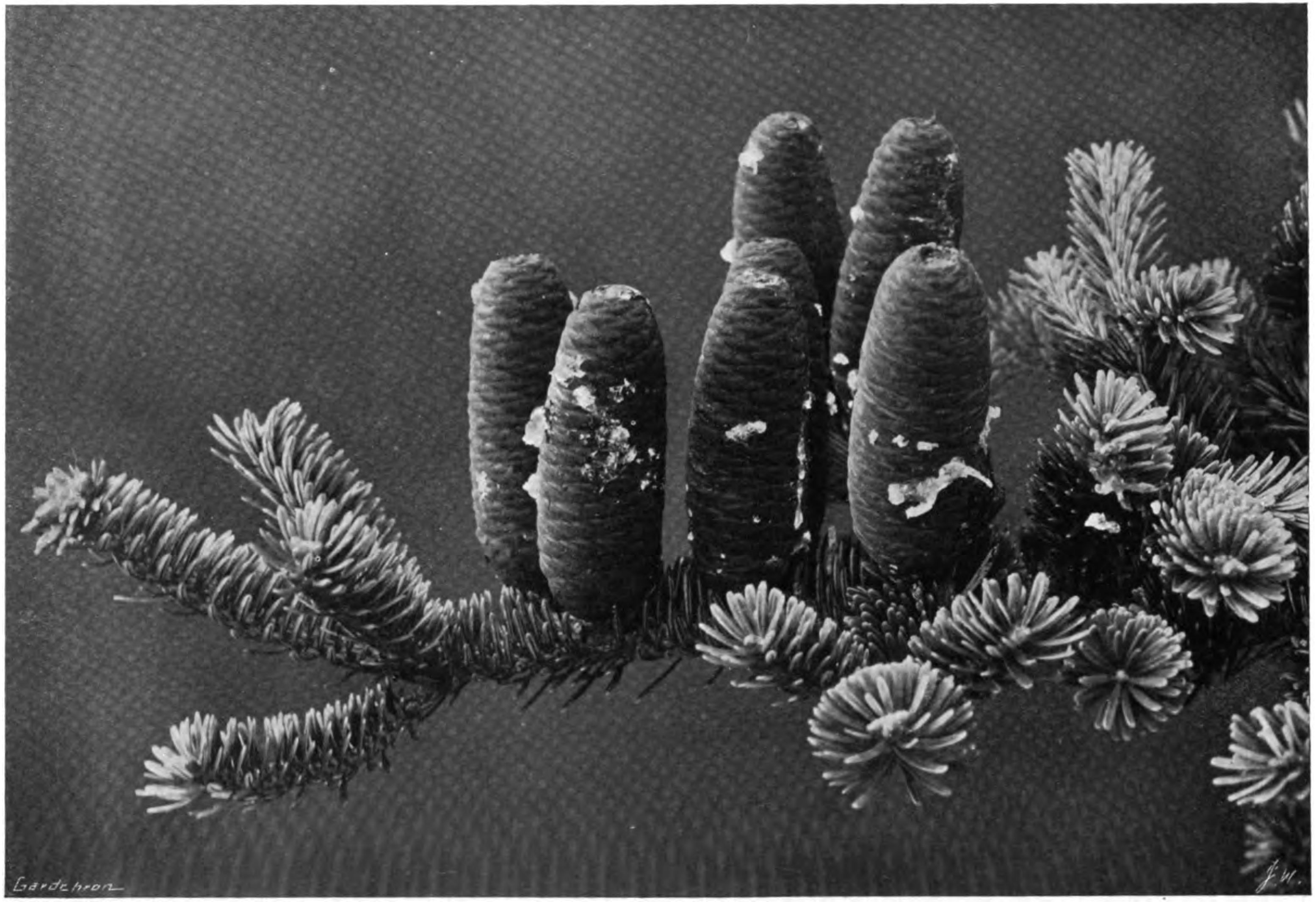
Names of Plants: *W. M.* 1, Myrtus communis; 2, Populus trichocarpa; 3, Phytolacca decandra; 4, Viburnum Tinus; 5, Catalpa bignonioides; 6, Solanum jasminoides; 7, Mimulus glutinosus; 8 Sedum species, send in flower; 9, Olearia macrodonta; 10, Santolina incana. *J. C. B.* Sedum Sieboldii.

Pleroma elegans: *J. O. M.* Possibly you may be able to obtain this plant from Messrs. Stuart Low and Co., Bush Hill Park, Enfield, Middlesex.

Raspberry Pyne's Royal: *J. W. S.* It is not possible to state if the canes sent for examination are true to name. We should like to see specimens again when in full leaf and fruit.

Communications Received.—S. T.—E. G. A.—Constant Reader.—J. A. K.—E. B.—J. J. W.—N. V. F. L.—N. E. N.—A. B. H.—R. J. W.—W. B.—F. K.—J. T. J.

Supplement to The GARDENERS' CHRONICLE.


Gardchron
J.W.

BRANCH AND CONES OF ABIES BRACHYPHYLLA.

THE
Gardeners' Chronicle

No. 1982—*SATURDAY, DECEMBER* 20, 1924

CONTENTS.

Alpine garden—
  Dianthus alpinus ... 419
  Erythronium revolutum White Beauty 419
Apples in Morayshire ... 417
Books, notices of—
  Mediaeval Gardens ... 422
  The old English gardening Books ... 422
Cypripediums at Nether Warden 420
Dasheen and its cultivation, the 416
Eucalyptus psylla, the 425
Florists' flowers—
  Exhibiting large Japanese Chrysanthemums on boards 425
  New Chrysanthemums 426
Fruit garden, the market 426
Fruit register—
  Apple Barnack Orange 427
"Gardeners' Chronicle" seventy-five years ago 417
Garden gates 417
Glasnevin, notes from 421
Hardy flower border—
  Anemone blanda ... 420
  Epimedium 420
  Solidago 420
Hardy fruit garden—
  Bees and Apple fertilisation 424
New Zealand, a National Botanic Garden for ... 415
Obituary—
  Dixon, D. R. 430
Palm seeds, on packing 415
Parks and gardens, public 426
Plants which remain steadfast 423
Reynolds, Mr. George... 415
Rose awards, the Wisley 424
Rose garden, the—
  Sports of Rose Premier 424
Sedgwick Park, the water garden at 422
Societies—
  Dumfries and District Horticultural ... 429
  Glasgow and West of Scotland 430
  Manchester and North of England Orchid 430
  Orchid Club 430
  Reading and District Gardeners' 430
  Royal Horticultural... 429
Trees and shrubs—
  Berberis japonica ... 421
  Carpenteria californica 421
  Ceanothus rigidus ... 421
Trees as weather forecasters 417
Udale, Mr. James ... 416
Week's work, the ... 418

ILLUSTRATIONS.

Apple Barnack Orange 427
Crassula columnaris at Glasnevin 421
Erythronium revolutum var. White Beauty 419
Eucalyptus psylla 425
Sedgwick Park, Horsham, the formal water garden at 423
Udale, Mr. James, portrait of 416
Warren House, Kingston, the entrance gates at ... 417

Supplementary Plate.
Branch and cones of Abies brachyphylla.

Average Mean Temperature for the ensuing week deduced from observations during the last fifty years at Greenwich, 38·6.

Actual Temperature—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 17, 10 a.m.: Bar. 30·4 temp. 43°. Weather, dull.

A National Botanic Garden for New Zealand.

It comes as something of a shock to realise that New Zealand, in spite of its wonderful flora and the variety and beauty of the plants in the islands not far removed therefrom, possesses no National Botanic Garden. It is difficult to name any part of the Empire which possesses so large a number of plants of horticultural value. Our own gardens here in Great Britain are full of them, and yet many of the best come to us so rarely that we have not yet learned how either to value or to grow them. Dr. Cockayne has recently written an interesting volume on the cultivation of New Zealand plants, and it is this publication which has led Mr. B. C. Aston to urge in the *New Zealand Journal of Science* that a National Botanic garden should be established for the cultivation and preservation of the choicest and most interesting plants of the New Zealand Flora. Not a few of the plants native to New Zealand are so easily grown as to be now in general cultivation—the Olearias, O. Haastii, O. macrodonta, O. stellulata, and others. Carmichaelias, C. flagelliformis and others, are not difficult to grow and are readily raised from cuttings, Griselinia littoralis flourishes no less on English soil than in its native home, and because of its good green stems and fairly close habit this shrub is one of the best of screens or hedge plants. But it is naturally rather of the difficult plants that Mr. Aston thinks and speaks. Many of them are already rare, and not a few are native of salty, peaty sands, either of part of New Zealand or of the Lord Auckland Islands where they flourish "in peat, sodden with water, very little sunshine, almost daily rain, temperature low all the year round, but rarely more than one or two degrees of frost." We could supply all save the last of these conditions, and were it our fortune to garden in Irish soil we should be strongly tempted to make there a New Zealand garden. In it would be planted Celmisia vernicosa, Gentiana cerina, one of the many queens of the queenly gems; Myosotis capitata, loveliest of all New Zealand plants; the gigantic Pleurophyllum speciosum and the gorgeous Chrysobactron Rossii; Ranunculus Lyallii would have a moraine all to itself, and there should be great breadths of the Auckland Isles Veronica, V. Benthamii, flanked by Olearia angustifolia, O. Traillii, and Senecio Huntii. In the rock garden we should plant the epiphytic Earinas which do well enough in soil, although naturally they grow on trees; E. suaveolens, E. mucronata, and E. aestivalis with Dendrobium Cunninghamii in a shady place. As a cushion plant we should try Scleranthus biflorus, with its large, yellow pin-cushions, and near it should be Plantago spathulata as a rosette plant; Eryngium vesiculosum, prickly, and prone to ramp, should have a place, but be kept within bounds. In the bog garden there should be species of Corysanthes with purple flowers. In drier, peaty ground, Gentiana saxosa should thrive. But surely the better thing would be for New Zealaud itself to establish a garden wherein all the varied beauty of the flora might be displayed. A garden with high ground for the alpines from north and south Island, the sub-antarctic flora from the Islands, the endemic plants from East Cape and Marlborough, and tree composites from the Stewart and Chatham Islands. We should all flock thither to see what surely would be one of the most beautiful and interesting gardens in the whole world.

Our Supplementary Plate.—Abies brachyphylla, the subject of our supplementary illustration, is one of the most handsome of the Silver Firs, and being less conservative in its requirements than other species of this section—for it will thrive under dry conditions as well as moist—it is surprising that it is not more commonly seen in gardens. Another point in its favour is that it is amenable to cultivation in districts where Conifers, as a rule, do not flourish, and at Kew, where the impure atmosphere is taking heavy toll of many specimens of Firs and Spruces, A. brachyphylla is amongst the few which shows little sign of poor health. Much of the charm of the species, commonly known as the Nikko Fir, is found in the cylindrical cones which, before they mature and turn brown, are of a purplish colour; resinous masses are exuded and these tend to add to their beauty. The foliage is very attractive, the undersides of the leaves being marked with two conspicuous bands of white stomata, with a distinct ridge between. In its native habitat in central Japan, A. brachyphylla is found growing at elevations between 2,500 feet to 5,000 feet, and specimens often attain a height of nearly one hundred feet. The species is figured in the *Botanical Magazine*, t. 7114, and was introduced to this country by Messrs. J. Veitch and Sons in 1870.

"Gardeners' Chronicle" Almanack for 1925—We shall publish in our issue of January 10 a *Gardeners' Chronicle* Almanack for the year 1925. In order to make it as useful as possible for reference we shall be obliged if Secretaries of Horticultural, Botanical, and Allied Societies, or any of our correspondents WILL SEND US IMMEDIATE INFORMATION OF ALL FIXTURES FOR THE ENSUING YEAR.

On Packing Palm Seeds.—It usually happens when fruits or seeds of Palms are sent home from tropical countries that they fail to germinate, yet, according to experiments* by Mr. N. Damner, if properly packed they may be sent without losing their power of germination. The author recommends packing, say, two seeds in a small lead box, about four by three-and-a-half by one-and-a-quarter inches, filling in with sawdust or charcoal and inserting one piece of unglazed moistened paper. The box should be loosely covered so as to admit air. By adopting this method he has found it possible to germinate many species of Javan Palms.

Mr. George Reynolds.—The many friends and acquaintances of Mr. George Reynolds, of Gunnersbury Park, Acton, will be pleased to know that he is recovering from his recent severe illness. In a letter from him we have before us he states that he is feeling much stronger and better, and hopes to be about again in the New Year. He further states that the doctors are pleased with his progress since his operation.

Parlous Condition of the Home Timber Trade in Scotland.—That the home timber industry in the north of Scotland is in a very precarious condition is only too true, and the pity of it all is that this is principally due to the extraordinarily high rates of transport. Slowly but surely, especially in the counties of Moray and Nairn, sawmill after sawmill is being closed down. It is computed that within the past year or two some thirty sawmills have been closed in Morayshire alone. What this means to large numbers of tree-fellers, cross cutters, loaders, carters, sawyers, firemen, and general labourers is better imagined than described. The lot of these men is certainly not a happy one. For nearly a quarter of a century the timber industry has been one of the most important in the north of Scotland. Long before the great war it was a dominating factor in the economic life of the north, and despite foreign, English, and Irish competition, it sturdily held its own. Then came the great upheaval, when the grand forests of the north were assailed right and left. A tariff of 10s. per ton—considerably less than the pre-war figure—was fixed by the railway companies, and this gave a great impetus to the industry. Instead of some 50,000 tons of timber railed south per annum, the figure rose in 1918 to over 400,000 tons—about eight times the average pre-war weight. When the war ceased, however, the 10s. rate was cancelled, and the new charges were at first 50 per cent. and then 100 per cent. above pre-war rates. It does not require much stretch of the imagination to realise the direful effects these changes had upon the industry. And not only had the industry to contend with these higher charges, but foreign competition, which soon set in, as well. The 100 per cent. over pre-war charges, after strong and repeated protests from the timber merchants, was reduced to 50 per cent. over 1914 rates. But this did not perceptibly relieve the situation. As one prominent timber merchant has declared—"the trade has been absolutely killed." Despite the great demands made by the war, there is no lack of fine trees standing in the Moray and Nairn forests. They are there in their tens of thousands, but no woodcutter appears to break the forest silence with his axe. The peculiar—ridiculous would be the most appropriate word—thing about the whole situation is that foreign timber can be taken by rail hundreds of miles to the coast, shipped across 1,000 miles of sea, and delivered at a British port at a price less than the figure charged for railway transport of a similar quantity of home timber carried only about 250 miles. No one will contend that the home timber supplies of this country can do more than supplement in the smallest way the large quantities that are required for our housing problems; but what there is of it should be given a chance. In the mansion houses of the country side, and in many of our old Scottish castles, there may be found to-day fine examples of the adaptability of home timber for constructional and decorative purposes, for all of which it is eminently suitable. From time to time we hear of home-grown timber found in these old houses after hundreds of years, still in use, in a perfect state of preservation. The entrance hall to Balmoral Castle, the King's Highland home, is panelled by Scots Pine from Ballochbuie forest, and so is the billiard room. Composed entirely of the heart wood of Scots Pine, as these panels are, they will probably be little different for generations, darker in general colour, but as fresh as they are to-day.

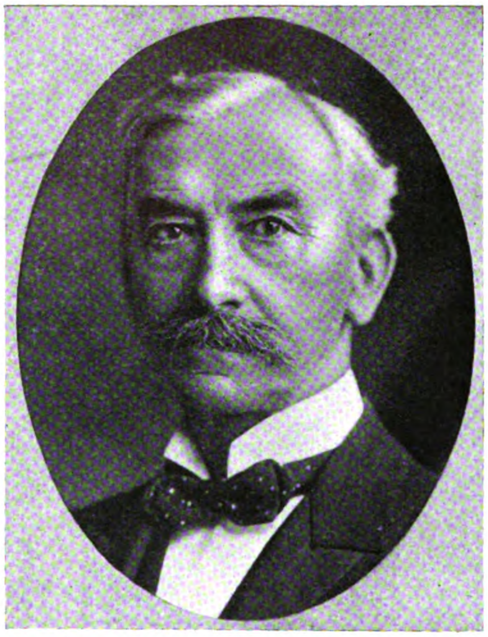
---

* *Notizblott des Königl. botanischen Gardens, Berlin.*

Register of Growers of Certified Stocks of Potatos in 1924.—We understand from the Ministry of Agriculture and Fisheries that inspectors of the department have examined, during the past season, many fields of growing Potatos of varieties which have been approved as immune from Wart Disease, with a view to the certification of the crops under the Wart Disease of Potatos Order of 1923, as being true to type and reasonably free from rogues. A list of the growers of these certified stocks has been prepared and copies may be obtained, price one shilling each, from the Ministry, who will also be happy to supply on application the names and addresses of growers of certified stocks of any particular variety, together with the numbers of the relative certificates. Growers are reminded that the only Potatos which may be planted on land infected with Wart Disease are those from crops which have been so certified. The names and addresses of growers of varieties not approved as immune from Wart Disease, whose crops have been inspected while growing and found to be true to type, are also given. Most Potato growers realise the importance of planting true stocks, and the extension of the system of inspection to non-immune varieties will, it is hoped, be of material assistance both to growers and purchasers of seed-set Potatos. The Board of Agriculture for Scotland has issued a similar Register of Scottish growers of approved immune varieties, and copies can be obtained from the Secretary, Board of Agriculture for Scotland, York Buildings, Queen Street, Edinburgh, price 2s. net, post free.

Street Tree Planting.—Mr. D. T. Lloyd-Jones, Deputy Borough Engineer of Halifax, in a paper on "The Safety Factor in Roads," submitted to the Yorkshire District of the Institution of Municipal and County Engineers, made some interesting remarks with regard to planting trees in streets. He stated that tree planting of town streets would appear to be an attempt to reconcile ideas which are diametrically opposed. The placing of trees in streets should receive careful consideration in regard to their effect on visibility. He was of the opinion that the fence-line (or gardens if they exist) is a better position for trees than the curb-line, for three reasons:—(a) they are more likely to flourish without attention; (b) they give an apparent greater width and dignity to the road; and (c) they offer less hindrance to visibility. At street junctions it would be wise to do without them altogether to allow an unobstructed view of side streets.

Mr. James Udale.—Born in Staffordshire in 1850, Mr. James Udale received an unusually good education for those times and was fortunate in being able to attend an exceptionally good night school conducted by the North Staffordshire Adult Education Society. He was also especially successful in passing the examinations set up by this useful body, indeed, his success was such that he proposed to enter the scholastic profession, but while waiting for a position of pupil teacher, he was invited to become an apprentice in a garden. This offer he decided to accept, and it is possible that heredity had something to do with his decision, as Mr. Udale has every reason to believe that he is a descendant of the celebrated Dr. Uvedale (often referred to as Dr. Udale) who lived at Enfield and was the first person to cultivate the Sweet Pea in this country, and after whom the well-known culinary Pear, Uvedale's St. Germain, was named. He served his apprenticeship in an old-time garden at Oldfield Hall, Uttoxeter, which was entirely remodelled and greatly extended under the superintendence of Mr. Barron of the Barrowash Nurseries. In the spring of 1868 Mr. Udale obtained employment at the Garston Vineyard, near Liverpool, then famous throughout the country for the cultivation of vines and Grapes. From Garston he went to Worksop Manor, the residence of Lord and Lady Foley, where Mr. John Miller was then the gardener. Here he gained experience in all departments of a well-kept establishment, including the art of decorating in the mansion. His next appointment was that of foreman at Lilleshall House Gardens, near Newport, Shropshire, the seat of the then Duke of Sutherland, where flower gardening was a special feature, and Camellias and Violets were grown extensively for winter use. Mr. Udale remained at Lilleshall for some considerable time and was then offered the position of gardener to Sigismund Cohen, Esq., a Manchester shipping merchant, who was keenly interested in gardening generally, but especially in Orchids, consignments of which he imported from Brazil. The success he achieved in the management of Orchids fired Mr. Udale's enthusiasm and created a desire for a wider knowledge of plants. Subsequently he applied for and obtained an appointment at the Royal Gardens, Kew, where he commenced work in the Palm House in April, 1874. Eventually he had charge of the Orchid pits, and later became sub-foreman of the T-range. After a very successful term at Kew, Mr. Udale left that establishment with the good wishes of all with whom he had been associated and a certificate of efficiency signed by the late Sir Joseph Hooker. In 1875 he became gardener to Sir Henry E. Watson at Shirecliffe Hall, Sheffield, and after eleven years spent with this employer he was appointed gardener and clerk of the works on the Elford Estate at Tamworth. This estate covered three thousand acres, and the fine mansion was surrounded by sixteen acres of gardens laid out in good style and taste. The estate included a village of well-built houses and cottages with gardens kept in excellent condition, as the owner, Howard F. Paget, Esq., took a very keen interest in the up-keep of his domain. Unfortunately, a great part of the estate was at a very low level, and as Mr. Udale's health suffered as a consequence he had to seek other employment. In 1891 he was appointed Horticultural Lecturer for the county of Worcester, and he still remains in the service of the county for which he has done so much, especially in connection with fruit cultivation and experimental work in vegetable growing. Although Mr. Udale has exceeded the allotted span of years he still enjoys fairly good health and is as vigorous mentally as ever; his many friends in the midlands and elsewhere will hope that he may continue his horticultural activities for many years to come.



MR. JAMES UDALE.

Kew Guild.—The Annual Meeeting and Dinner of the Kew Guild will be held on May 20, 1925. Time and place will be notified later.

The Dasheen and its Cultivation.—A bulletin* devoted to the cultivation of the Dasheen has been issued by the United States Department of Agriculture, and it appears that this comparatively new vegetable is gaining favour with the Americans. The Dasheen (Colocasia esculenta) was introduced to the Southern States many years ago, but faulty cultivation and incorrect marketing of what does not appear to be a very attractive tuber hampered the demand, notwithstanding the fact that the Orient and West Indian Dasheens have always met with approval by the foreign populations of the larger cities. The *Bulletin* deals with the cultivation and marketing of the crop and the use of the starchy tubers in a similar manner to Potatos. The young leaves may be used as "greens," and, furthermore, the blanched young shoots obtained by forcing the tubers into growth in darkness, also provide a pleasant vegetable of Mushroom flavour. A number of recipes for the cooking of this vegetable also find a place in this interesting publication.

Seed Trade Association.—Major Webb, of Messrs. E. Webb and Sons, has been elected President of the English Seed Trade Association for the ensuing year.

Massachusetts Horticultural Society's Honours to U.S.A. Horticulturists—The Massachusetts Horticultural Society has recognised the services of several prominent American horticulturists by awards of Medals and First-Class Certificates. Gold Medals have been conferred on Mr. Alexander Montgomery, Hadley, the well-known Rose raiser; Miss Grace Sturtevant, Wellesley Farms, for her work amongst Irises; Mr. Robert Cameron, Superintendent of the estate of R. T. Cranes, Esq., at Ipswich, U.S.A., for eminent services in promoting horticulture, and to Mr. T. D. Hatfield, Superintendent of the estate of Walter Hunnewell, Esq., Wellesley, also for eminent services in promoting horticulture. Silver Medals have been awarded to Mrs. Harriett R. Foote, of Marblehead, for her work amongst, and interest in, Roses; and to Mr. Eugene N. Fischer, of Jamaica Plain, a successful raiser of Gladioli.

---

* "The Dasheen." *Farmers' Bulletin, No.* 1396. U.S. Department of Agriculture.

Morayshire Apples.—An outstanding feature at the recent root-shows in the north of Scotland has been the magnificent entries of Apples from Morayshire. That the fair name of Morayshire—well-named the garden of Scotland—as a fruit growing county is of no recent date, may be gathered from the fact that so far back as 1618 the author, Taylor, wrote:—"The countie of Murray is the most pleasant and plentiful country in all Scotland." Possessed of a delightful climate, with large areas of rich soil—the latter due in great measure to the weathering of the old red sandstone—capital results are derived from fruit growing. Remembering the large quantity of fruit that comes into this country from abroad, it is pleasing to notice that exceptionally fine Apples may be grown at home. Not only do the Morayshire Apple growers produce the finest of specimens but they have learned thoroughly the art of skilful packing. Some districts that could be named have much to learn in this art from Apple growers overseas.

Trees as Weather Forecasters.—Dr. A. E. Douglass, Director of Steward Observatory and Professor of Astronomy at the University of Arizona, Tucson, has discovered that the annual rings in Pine trees show, by the rapid or slow seasonal growth, the rainfall during the tree's existence. From the tree rings Dr. Douglass has worked out the probable variations of the sun during the last four or five centuries, and in collaboration with an English astronomer claims to have found a connection between these rings and the prevalence of sun spots, declaring that there was a dearth of them from 1650 to 1715. Dr. Douglass hopes to increase the accuracy of long-range weather forecasts through his discoveries; at present he is investigating giant Sequoias, and hopes to obtain data over a period extending backwards for three thousand years.

Appointment for the ensuing Week.—Tuesday, December 23: Newcastle and District Horticultural Society's lecture.

"Gardeners' Chronicle" Seventy-five Years Ago. *Report on the Cambridge Botanic Garden.* Christ's College Lodge, December 15, 1849.—The new Botanic Garden Syndicate beg leave to make the following report to the Senate:—The parts of the new Botanic Garden ground, upon the planting of which the Vice-Chancellor was authorised by grace of the Senate, on November 8, 1848, to expend a sum not exceeding £100, have been planted, and the trees and shrubs upon them are in a flourishing condition. The trees in that part of the Arboretum forming the belt, which had been previously planted, have made remarkable progress and show in a striking manner the advantage resulting from the deep drainage and trenching to which the land was subjected. In addition to the 1,776 herbaceous plants removed from the old Garden, and the donations of 890 species mentioned in the last Report of the Syndicate, there have been about 1,200 specimens presented to the Garden, and planted in the herbaceous division. Also, in the Arboretum, there are now specimens of 1,589 species or varieties of trees and shrubs, of which number 688 have been purchased under the authority of the grace of the Senate above-mentioned, and 123 have been presented to the Garden by private liberality. The Syndicate desire to direct the especial attention of the Senate to these large donations, consisting in all of 2,258 plants, of which the great majority were new to the collection, and which have placed the Garden, containing as it now does about 5,000 species of hardy plants, in high relative position with regard to that department amongst the Botanic Gardens of this country. *Gard. Chron., December 22, 1849.*

Publication Received.—*American Fruits.* By Samuel Fraser. Kegan Paul, Trench, Trübner and Co., Ltd., London. Price $4.75.

GARDEN GATES.

The Rev. Hilderic Friend, in his interesting articles, entitled: "Garden Craft in the Canticles," has shown us that the word garden is derived from words meaning "to enclose, protect or guard," and it is therefore obvious that a gateway must always have been provided in gardens from the oldest times.

Whilst, doubtless, the first garden gates were of very simple character, they became eventually of a very ornate and imposing design, as may be seen from some of the earliest illustrations of gardens; for example, in the title page of "*A most briefe and pleasaunt treatyse*" on a garden, by Thomas Hyll, 1563, the garden is shown enclosed with a fence and a belt of shrubs, with a very pretentious garden gate at the extreme end. Likewise, in "*A Garden of Flowers,*" 1615, there is an illustration of a beautiful garden gate, the doors carried on masonry of a very imposing design, with two large statues from which a stone arch seems to spring, and with a tall canopy carrying shields bearing the arms, doubtless, of the owner, with sundial and other ornamentations.

Many modern gardens are entered by gates of wrought iron that are very costly, and exemplify some of the finest specimens of the iron-workers' art.

In Fig. 332 is reproduced an illustration of the beautiful entrance gates at Warren House, Coombe Wood, Kingston, the residence of General Sir Arthur Paget, a description of whose delightful gardens was published in *Gard. Chron.*, August 23, p. 131. Visitors to Aldenham House gardens will remember the magnificent wrought-iron gates that provide an entrance to the Yew walk, also the beautiful, but smaller, gate by which entrance is gained to the kitchen garden.

There is a remarkably fine pair of iron gates in the gardens of Luton Hoo, notable not only for their artistic design, but for their durability and generally imposing appearance. Other stately garden gates that occur readily to the mind, are those at Hatfield House, and Welbeck Abbey, including the entrance gate to the sunk garden, presented to the Duchess of Portland by the women of Nottingham, on the occasion of Her Grace's Silver Wedding.

At Abington, Lanarkshire, there is an interesting garden gate known as The Athenian gate, which was brought from Athens by Sir Edward Cullbrook, and, although this gate is of extreme age, it is still in a fine state of preservation. Many of our gardens nowadays are also adorned by gates brought from Italy and Spain, and it is remarkable how diverse, and yet how beautiful, are the designs of these old-time garden gates.

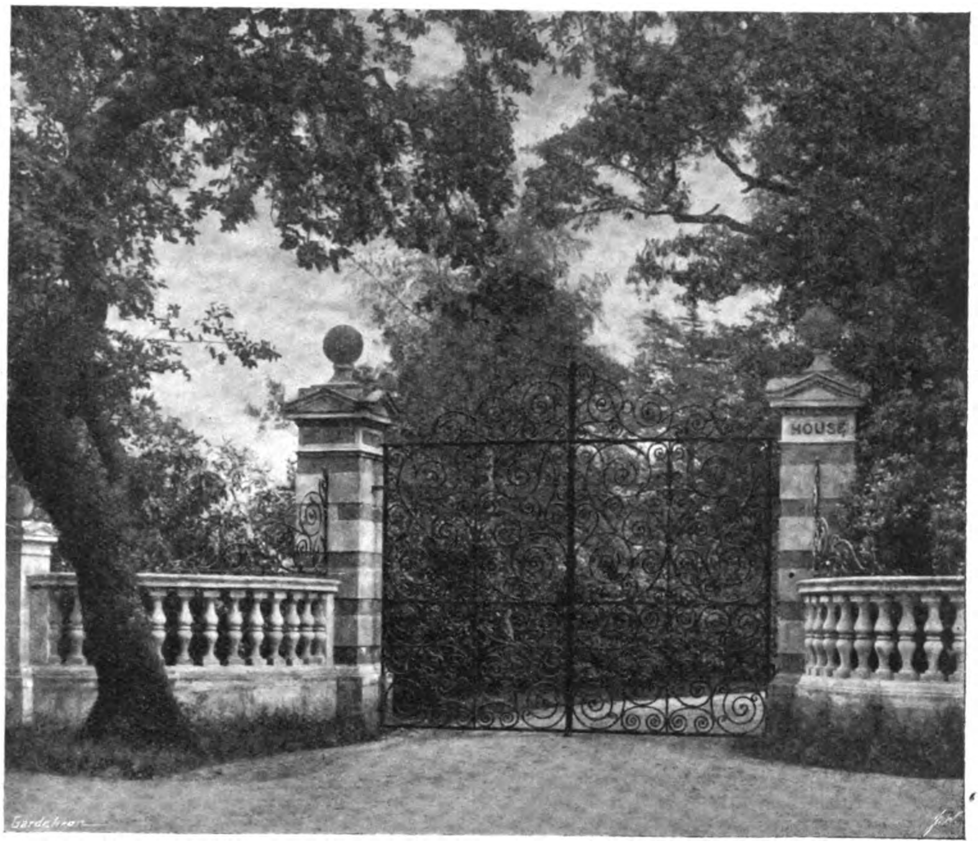


FIG. 332.—ENTRANCE GATES AT WARREN HOUSE, COOMBE WOOD, KINGSTON, SURREY.

The gates at the main entrance to Kew Gardens may be included amongst the most important in the country, and, doubtless, these gates are familiar to more gardeners than any others. Amongst the most beautiful in this country are the Norwich gates at Sandringham, which were presented to H.M. King Edward VII. by the people of Norwich on the occasion of his marriage.

In quite another category are such gates as those at Hall Barn, Lord Burnham's estate in Buckinghamshire, where the pattern is worked out in garden implements, such as spades, rakes, forks, etc., a design that would especially appeal to the whimsicalities of such a keen garden lover as the late Sir Frank Crisp.

Garden gates of recent installation in this country are too often of Italian origin. In the reproduction of gates of fine design the village blacksmith might, if encouraged by local demand, try his hand. He possesses the necessary craftsmanship and where he has the artist's touch could be trusted to make a good job of it.

The Week's Work.

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Phalaenopsis. — Phalaenopsis amabilis, P. Schilleriana, P. Sanderiana, and others of this genus are developing their flower spikes. They should be watered with great care during the winter, as an excess of moisture at the roots may set up decay in the leaves. The plants should be examined each morning, and if the Sphagnum-moss on the surface has become dry it should be lightly sprinkled so soon as the temperature rises above 65°; at the same time damp the sides of the receptacles and the roots that are clinging to them with tepid rain water. The flower spikes should not be allowed to remain on the plants for any considerable length of time after the flowers are developed, or the plants will be permanently injured. These Orchids should be grown in a light position, but not exposed to direct sunshine.

Calanthe. — Some of the early-flowering varieties of Calanthes of the C. vestita and C. Veitchii section are in flower, and they should be staged where the atmosphere is fairly dry, and the temperature about 60°, where the scapes will remain in perfection for a long period. Moreover, if they are used as cut blooms they will not fade so quickly as when brought from a close, moist atmosphere. The plants require but very little water now as they should be afforded a season of rest. After the inflorescences are cut the plants should be placed in a dry position near to the roof glass, in a house in which the temperature does not fall below 60°.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Dahlias.—The stored tubers should be examined at frequent intervals to see how they are keeping. Should any sign of decay be apparent remove the affected parts and dust with powdered lime or charcoal.

Gunneras.—These noble plants need slight protection during severe weather, but care should be taken that the material used does not press on the crowns of the plant. A good plan is to bend Willow shoots over the plants in the formation of a skeleton basket and cover this with Bracken Fern which may be attached, if necessary. Such protections are apt to harbour rats during the winter and they should be examined occasionally and steps taken to prevent the depredations of these rodents.

Herbaceous Borders.—When the necessary replanting has been completed those borders which do not need replanting may receive attention. They, should be cleared of all dead growths and stakes, and very strong-growing plants may have their clumps reduced somewhat. The borders should then receive a liberal dressing of short manure and the whole surface carefully forked over, leaving it on the rough side for the weather to act on it.

The Rose Garden. When rough winds prevail, strong growths are liable to sway and loosen the necks of Rose plants in the soil. These shoots frequently fail to ripen and may safely be reduced in length by a half now, and thus lessen the leverage from high winds. Where it is intended to peg the shoot down to the soil and the whole length is wanted, such shoots should be tied to a support to prevent them swaying. The question of how much protection to give Roses during the winter is a vexed one and depends largely on soil and exposure. My experience is that it is wise to give some protection to bush Roses in all but the mildest and most favoured districts, and for this purpose nothing is better than a little Bracken-Fern or partially-decayed vegetable matter. Thick coatings of heavy manure frequently do more harm than good, as also does the practice of drawing the soil away from the roots and heaping it round the base of the plants.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Pycnostachys Dawei.—Where blue flowering plants are popular for winter, this subject is well worth growing as it is of easy culture. Seeds should be sown in the spring. To obtain the best results the plants should be grown as sturdily as possible in a warm greenhouse during the early stages of growth. Being a strong-growing plant and a gross-feeder, eight-inch pots should be used at the final potting. The points of the growths should be pinched several times during the spring and summer. When the plants have made good specimens give them cool treatment during the latter part of summer and early autumn. During the past dull summer the plants have inclined to become drawn. The bright blue flowers are now being produced and the plants should be grown in the lightest position in a house having a temperature of about 60° and be fed with weak liquid manure or soot water until the flower spikes have half developed.

Bulbs.—An examination of the bulbs in the plunging materials should be made weekly from now onwards, removing those only which have well filled their pots with roots. Keep these darkened for a week or so, gradually exposing them to full light. Though the season is approaching when forced bulbs have to be relied upon to augment the supply of flowers, nothing will be gained, and probably disappointment will result, if a too hasty forcing is attempted. The bulbs should be introduced into very gentle warmth at first, increasing the temperature gradually at intervals of a fortnight or so. Tulips may be flowered more readily when grown in a partially darkened house during the early stages of growth. Some of the stronger and more forward of the Freesias growing in pots may now be introduced into gentle warmth on a shelf near the roof-glass to produce their flowers by the New Year.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Plums.—These trees may now be pruned, cutting back the laterals which have been summer pruned to two or three buds where the growth is stout, and to one eye in the case of weaker shoots. The main growths should be pruned back to four or five buds, taking care that the end bud is on the outside of the shoot. Plums are very liable to throw up strong suckers from the base, and these should be cut clean away or they will greatly weaken the trees. In planting young trees see that the ground is not made too rich; no organic manure should be used. Incorporate plenty of lime rubble with the soil, as lime in some form or other is essential to all stone fruits. It will tend to keep the soil sweet, and help to build up medium-sized, fruitful wood well set with fruit buds. In planting, thoroughly ram the soil around the roots, as the firmer Plums are planted the better will they succeed. In the case of new trees, allow some time to elapse before pruning them, then cut the main growths back to one-third of their length. Wall trees need not be fastened permanently until the spring, then allow plenty of room in the fastenings in order that the wood may swell without the ties or shreds cutting into it. Mulch the trees with light manure that is not too rich, to help to conserve the soil moisture during the summer.

Nut Bushes.—These will have made much growth this season owing to the wet weather, and where this is so the branches should be well thinned, and any suckers around the trees dug up. These bushes may also be mulched with well-rotted manure, as regular mulchings will help to keep them in a fruitful condition. Nuts are a profitable crop to grow in large orchards, planted between the rows of standard fruit trees, as they often yield a crop when other fruits are scarce. Well-grown bushes, properly pruned and thinned, add greatly to the appearance of an orchard, both in summer and winter. Each bush should be planted in a circle of about six feet diameter, and the ground in this area kept clear of grass and weeds.

Planting. — Push on with this operaton while the weather remains open, as autumn planting of all trees or bushes is far preferable to spring planting. The trees are better established by spring and enabled to withstand hot, dry weather in summer. Mulch them with half-decayed manure so as to conserve the soil warmth and moisture, and they will make roots before very cold weather sets in. See that each tree is correctly labelled so soon as planting is finished.

Fruits in Store.—Look over Apples and Pears in the fruit room periodically and remove any that are going bad. Ventilate the room freely during mild weather, but close the ventilators during frosty nights, in order to keep the temperature as even as possible. Pears required for dessert purposes are much improved if placed on wood-wool in boxes or trays and stood in a warm frame for a few days, allowing air to circulate about them.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Late Vines.—It will be necessary to examine the bunches of late Grapes frequently for the removal of decayed berries. The bunches of such varieties as Gros Colmar and Lady Downes may be allowed to remain on the vines until the last week in January unless a Grape room is available, when they may be cut and placed in bottles. This done, the ventilators of the vinery may be opened freely, for plenty of fresh air will prove beneficial to the vines. If the Grapes are allowed to remain on the vines, the latter should never be allowed to become excessively dry at their roots or the berries will shrivel and fail to keep. Water applied in moderation in the forenoon will benefit both the Grapes and the vines. Admit air both night and day whenever the outside conditions are favourable.

Muscat Vines in Borders.—If Muscats are planted out and the ripe Grapes are required by June, these may be assisted by a mild, hot-bed placed on the border. The fermenting material will help considerably to encourage root action, and will obviate, to a certain degree, the need of artificial warmth, which is an advantage. Moreover, the dung and leaves will produce a moist atmosphere, which will prove beneficial to vines by counteracting the dry heat given off by the water pipes. The condition of the border with regard to moisture should be ascertained and, where it is considered necessary, tepid water should be applied in preference to cold water from the service pipe. The temperature and general treatment will be similar to those recommended for pot vines.

Pot Cherries.—If early Cherries are required the house in which the trees are to be grown should be cleansed and put in order. Very little if any pruning will be necessary, provided the shoots were stopped during their growing season. Cherries resent the use of the knife, but by pinching the young growths during the summer months the amount of winter pruning will be reduced to a minimum. For this early crop, trees grown in pots are without doubt the most serviceable and are more easily managed than trees planted out. In forcing the Cherry always bear in mind that it is particularly impatient of much fire-heat, but at the same time sufficient warmth must be used to prevent a stagnant atmosphere or the fruits will not set freely. Should the weather be mild when the house is closed fire-heat will not be required for the first ten days or so, and air may be admitted when the temperature from sun-heat rises to 50°, but close the ventilators as the sun's power begins to wane. Should the weather prove frosty merely use sufficient fire-heat to maintain a night temperature of 40° and this amount of warmth may be increased during a mild spell. Spray the trees early in the day with tepid water, but only when the weather is favourable, to allow them to become dry again by nightfall.

THE KITCHEN GARDEN.

By WALTER Y. STAWARD, Gardener to MAJOR ANDREW COATS, Burrough Hill, Melton Mowbray, Leicestershire.

Mushrooms.—More manure should be collected for the making of further beds. If plenty of horse droppings are to be had a fresh bed should be made every week for successional cropping. The temperature should be kept as evenly as possible, and the walls and beds damped every morning. Beds coming into bearing should be covered with very short old hay, which will serve to keep the soil in a moist condition all over the surface.

Lettuce.—Those who have plenty of frames and plenty of young Lettuce plants in the open should make a further transplanting of Lettuce in frames. The plants will be very acceptable in early spring for use as salad. Select the strongest plants for this purpose and make the ground in the frames fairly firm before planting. Dust the ground with soot or lime to keep slugs in check; guard against damping in the plants, exercising great care in watering, and removing any leaves that have decayed and are likely to accumulate moisture.

Cauliflowers.—Plants in frames will need close attention for the next few weeks to keep them in a healthy condition. All decayed leaves should be removed and the soil between the plants stirred. Admit plenty of air to keep the plants as hardy and sturdy as possible, and on very bright days remove the lights altogether, replacing them in the evening.

Potatos.—Tubers in store should be examined carefully, for any that are bad, if left too long, will soon spoil others if not removed in time. Should new seed tubers be required for planting next spring, place the order with a nurseryman so soon as possible to ensure early delivery.

General Remarks.—Where Broccoli has been grown and cut, the stumps should be cleared away, the ground manured and left rough on the surface to expose so much of it as possible to the winter's frost. Where Potatos have been grown, the ground should be dressed with rotted manure and turned over with either the spade or the plough. If this is done it will work much easier in spring. After being ploughed or dug, a liberal dressing of shell lime will be beneficial to the land. The winter frosts will ameliorate the land and it should be in fine condition for planting when the proper time arrives.

ALPINE GARDEN.

ERYTHRONIUM REVOLUTUM WHITE BEAUTY.

THIS hardy Dog's Tooth Violet is well worth growing in the rock garden, as indicated by the illustration (Fig. 333), which shows a plant growing on a ledge, about two feet above the ground level, at Coombe House, Croydon. The small plant on the extreme left, is a self-sown seedling, and quite true to form; there are two other seedlings, shown in the forefront of the picture, which have not yet flowered. These two seedlings have a single leaf each; indeed, seedlings produce only one leaf annually for three or four years when self-sown out of doors in this district. We are expecting these two seedlings to flower next spring.

The large specimen carried twenty flowers this year and the strongest flower stem bore four flowers. The plant produces a beautiful effect, to which the richly-marked leaves of pale, grey green, mottled with purplish-brown, contribute considerably. The flower stems and buds make their appearance in March, and are a soft, pale brown colour, forming a distinct contrast to the leaves. As the flower stems elongate the bud stalks assume a downward curve, with the top of the bud pointing to the earth; the flowers open gradually, and the petals remain for about three days in a horizontal position, when each petal recurves towards its stalk, almost touching it. The stigmas and anthers point earthward. The flowers are white, with a small orange ring close to the base of the petals, and they quiver and nod in the slightest breeze. The flowering time is April and the plant lasts in beauty for several weeks.

The specimen illustrated is growing in a position which receives no sunshine during late autumn and winter. The compost consists of ordinary light garden soil, with a small addition of peat and a very small sprinkling of chalk. Moss grows freely on the stones surrounding the plant. The present is a suitable time for planting this Erythronium, but there should be no delay.

There are several forms of E. revolutum, and the one known as E. grandiflorum carries four to five flowers on a stem, whereas E. Dens-canis bears one flower on each stem and is quite a dwarf plant. E. revolutum White Beauty is about eight to ten inches high. *Mark Mills.*

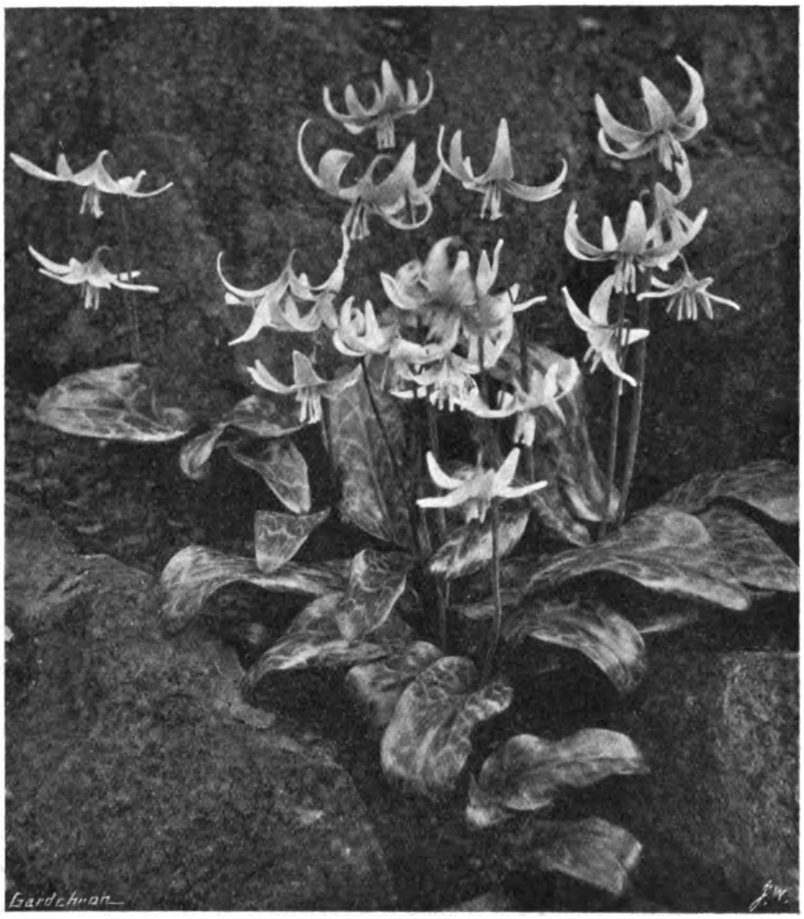


FIG. 333.—ERYTHRONIUM REVOLUTUM VAR. WHITE BEAUTY.

DIANTHUS ALPINUS.

THIS lovely species is included in the "best dozen" rock garden Pinks. It may not always be easy to cultivate, but in a soil and situation that suits it no plant grows more vigorously.

The glossy, grass-green foliage makes broad, closely-set mats, and strong plants yield an abundance of very large, short-stemmed flowers from June onwards. The blossoms vary considerably in colour, ranging from a poor white to pale blush and a full-toned pink. The variety known as Clarkii is the best we have grown, taking vigour of constitution and colour and size of flower into consideration.

Our most successful patches of D. alpinus are accommodated on a somewhat cool ledge, but with full exposure. The flat bed has perfect drainage, which is essential to this species, and the gritty loam is mixed with old, fine leaf-mould and lime in some form, which latter appears to be as necessary as the drainage and coolness. *J.*

HARDY FLOWER BORDER.

EPIMEDIUM.

The Epimediums (Barren-worts) are very ornamental and desirable plants for either the front row of the herbaceous border or as an edging to flower beds; they are also very effective when associated with alpine plants on the rockery.

The genus contains some of the daintiest and most interesting of hardy perennials in cultivation, and they have a threefold recommendation, in their pretty, rose-tinted, compound, ornamental foliage in spring; their flowers are as fascinating in the autumn as many of the rare, tender and costly Orchids, and as they retain their old leaves until the fresh ones appear in the ensuing spring, they may be regarded as evergreen.

All are perfectly hardy, and thrive and flower abundantly in either partially-shaded or full sunny positions. They grow freely in a cool soil containing peat or leaf-mould, but these materials are not absolutely necessary. If planted as a permanent edging to beds or borders their closely-matted, creeping, underground roots quickly become established, and the plants form a decorative, close edging. The species grow about twelve inches high and flower from May onwards; their blooms are produced on erect, wiry stems and are of various shades.

E. niveum is white; E. bicolor, violet and white; E. colchicum, yellow; E. pinnatum elegans, yellow: E. sulphureum, sulphur-yellow; E. coccineum, reddish-maroon: and E. violaceum, violet. The Epimediums are also well adapted for growing in the shade of shrubberies.

SOLIDAGO.

The Solidagos constitute a genus of coarse-growing border perennials, and many of the species are suitable for growing in semi-wild parts of the garden. They are effective and useful autumn-flowering plants.

Some of the dwarfer species and varieties are of decorative value in the rockery. Solidago brachystachys forms dense tufts of dark green foliage, and numerous pretty, yellow flowers on spikes only six inches high. S. Buckleyi bears flowers of a deeper shade of yellow, is very free-blooming, and grows under twelve inches in height.

Solidago caesia is one of the most distinct and decorative species, useful either for the front row in the herbaceous border or for the rockery. This plant has a graceful, pendulous habit, and produces its pretty, star-shaped, yellow flowers on stems under two feet tall. The dark, green foliage is elegantly curled. Solidago Virgaurea nana may claim a position on the rockery, as it only grows one-and-a-half foot high. It is a plant of erect stature, and is smoothed with rich, golden-yellow flowers during August, when most other rock plants are out of flower. All the Solidagos are perfectly hardy, and thrive in any ordinary soil in a sunny position. *W. Logan.*

ANEMONE BLANDA.

Anemone blanda is a little plant of almost marvellous beauty, and one of the first to bloom after the New Year comes in. I have had it in bloom in mild winters before the end of December, but it is in February and even in March that it is at its fullest beauty. It is exquisite when associated with Snowdrops, and a delightful effect may be produced by a carpet of the Greek Windflower with the "Fair Maids of February" spearing through it. The charm of the blue flowers of the Windflower, enhanced with the purity of the Snowdrops, is beyond words most beautiful.

Anemone blanda has hard, gnarled, tuberous-roots that, to all appearances, are unlikely to produce beautiful leaves and flowers. It only grows from four inches to six inches high, and the type has charming blue flowers; in form they more closely resemble Anemone apennina than A. nemorosa. There is a highly desirable variety called A. blanda scythinica, which has white flowers with the exterior of the segments bedecked with blue. Then there are some pure white varieties, and others with Rose-coloured flowers, but none is more exquisite than the typical blue form.

It is now too late to plant dry tubers, but plants may usually be purchased in pots.

In autumn dry tubers of A. blanda may be purchased comparatively cheaply, and they should be planted from one inch to two inches deep in a sunny position in light, sandy, well-drained soil. The rock garden is a good place for the Greek Windflower, but it is equally charming in the border or in grass, although it is rather expensive to plant in great breadths in the latter. It is hardy, and where it finds a congenial home, will increase from year to year. Although called the "Greek" Windflower, A. blanda is widely spread in the Mediterranean regions, and our imported supplies come mainly from some of the islands and from the adjacent countries on the Asiatic continent. *S. Arnott.*

CYPRIPEDIUMS AT NETHER WARDEN.

Nether Warden, the home of Clive Cookson, Esq., is situated in a charming position in the Tyne Valley, about three miles above Hexham. Having been so long associated with his father, the late Mr. Norman C. Cookson, it gave me great pleasure to inspect the collection at Nether Warden, where Mr. Clive Cookson has brought together a collection of fine Cypripediums.

The most difficult Cypripediums to manage are C. niveum, C. bellatulum, and their allied species and numerous hybrids therefrom; yet these are grown superbly at Nether Warden. Mr. W. J. Stables, who so ably grows Mr. C. Cookson's Orchids, attributes a great deal of his success to the fact that there is a considerable amount of lime in the loam he uses for potting purposes. In this compost he inserts limestone chippings, and he always uses these for drainage. In my long connection with Orchid cultivation, I have never seen this section so well grown.

A few of the newer and lesser known hybrids have been selected for the following notes:—Of C. Psyche (niveum × bellatulum), four very different forms were in flower at the time of my visit. The large dorsal sepal is white, lined and spotted with purple, with a suffusion of purple on the lower portion. The petals are two-and-three-quarter inches long and one-and-a-half-inch broad; white, heavily lined with minute rose-purple spots; the lip is white with small spots on the basal portion.

C. Virgo (Psyche × Godefroyae), with the exception that the flower stems are longer, might easily be mistaken for C. Godefroyae.

C. Blanchette (niveum × Psyche) may be best described as a glorified C. niveum, with rich purple spottings.

C. A. J. H. Smith (niveum × Euryades), as grown here, is probably one of the best of this section. The flowers are carried on long stems; the dorsal sepal is creamy-white suffused with rosy-purple towards the basal half; the finely-shaped petals are white, the upper half being suffused with polished rosy-purple, and the lower half creamy-white with lines of tiny-purple spots and a white margin. The lip is white with minute rose spottings. The plant is vigorous in growth, and the foliage shows the intermediate characteristics of the parents.

A promising unnamed seedling is the result of crossing C. niveum with C. Alcibiades. The flower has a white ground, with numerous lines of small spots on the sepals and petals, and a delicate suffusion of rosy-purple over the whole of the segments. The lip is white, and the prominent yellow and green shield of the column is very attractive.

C. Angela (niveum × Fairrieanum) makes fine plants with three or four flowers on each; the long, slender flower stems are like those of C. Fairrieanum. The flowers are white, the sepals and petals being heavily lined with tiny, rich purple spots. The hybrid shows the influence of both parents in habit of growth and in the form of the flowers.

C. Greyi (Godefroyae × niveum) is a very pretty flower with the sepals and petals evenly balanced. The white flowers have small spottings and a delicate rosy-purple suffusion at the base of the segments.

There were also several plants of C. Boltonii × C. Nandii in flower. C. F. K. Sander (bellatulum × Annie Measures) has an exceptionally large and finely spotted flower; C. Dowleri (insigne × Godefroyae), and C. Idaho (Venus × Mrs. F. Sander) with distinct yellow flowers, spotted with purple, show little influence of C. niveum except in the tesselation of the foliage. C. Fairrieanum and its hybrids are also exceptionally well grown here, but the large, healthy plants of the species had passed out of flower before my visit. I noticed good specimens of the freely-flowering C. Mrs. Norman Cookson (Fairreianum × Argus), C. Sybil (Fairrieanum × Gowerianum), and many others of the older and better known hybrids.

The more recent introductions of what we may term the "gigantic" sections are represented by many of the more recently certificated kinds. Among those in flower were C. The Warrior (Lord Wolmer × Alcibiades var. illustrus), with its huge green and white dorsal sepal nearly four inches in diameter, and C. Cappamagna var. F. Sander (Nubia × Cardinal Mercier). The latter has a rich purple and white dorsal sepal, and the generally well-balanced flower makes it one of the most desirable of recent introductions.

C. Chrysotoxum (Chrystopher × Pyramus var. magnifica) carries a grandly shaped dorsal sepal, while C. Memoria F. M. Ogilvie was in splendid health. C. Oakwood Giant (Harold × Beekmanii) exhibits in its huge flower many of the colour-characters of its grandparent, C. hirsutissimum.

Deeply coloured Cypripediums were represented by fine flowering plants of C. Robin Hood, C. Moira, C. Cardinal Mercier, and others.

I cannot conclude these notes without referring to the seedlings. As Cypripediums of the C. niveum section do so well here, Mr. Clive Cookson has naturally made use of all material at hand for the purpose of raising new hybrids, and the time is not far distant when many of the plants will flower. One plant in particular was most remarkable. It is the result of a cross between C. Charles Sladden and C. niveum. The foliage—across the single growth from tip to tip—measures thirteen inches, and is broad in proportion. It will be interesting to see what influence its grandparent, C. Chamberlainianum, will have on the offspring.

In addition to Cypripediums, Mr. Cookson has four distinct crosses from the rare, purple-coloured Calanthe Angela. For years after this Calanthe was raised, repeated attempts were made to intercross it with other varieties, and the conclusion arrived at was that when used as a male parent it was impotent, therefore it is especially interesting to find that after so many years of failure, Mr. Cookson has at last been successful, and I hope the result will be something which will amply reward him for his persistent efforts.

Although these remarks refer particularly to Cypripediums, other Orchids are exceptionally well grown at Nether Warden, and every credit is due to Mr. Stables for the skill and enthusiasm he shows in every department of the gardens. *H. J. C.*

TREES AND SHRUBS.

CARPENTERIA CALIFORNICA.

Though by no means hardy, this fine evergreen shrub—one of the most notable of California's flora—can withstand considerable severity; a specimen fully in the open here was uninjured last winter, in spite of the fact that we had up to 16° of frost for several successive nights.

In favourable climates C. californica makes a large, bushy shrub of some six feet or more in height. Its long, narrow, glossy-green leaves, pointed at each end, and slightly silky, are distinct and handsome, and afford a telling background for the beautiful blossoms. These have often been likened to those of Anemone japonica, being pure white, with a boss of golden anthers. Their fragrance is delicious, and the flowers being borne in ample terminal clusters on the current year's wood, are extremely effective.

Generally, C. californica, which belongs to the Saxifragaceae and allied to Philadelphus, does best against a sunny wall, where there is plenty of light, and planted in a freely-drained, medium loam. Judging by the way this shrub flourishes in some limy districts and against walls, one may conclude that it would appreciate some old mortar about the roots at planting time, but this is probably not necessary. Propagation is best effected by seeds. *N. Wales.*

CEANOTHUS RIGIDUS.

Though by no means one of the hardiest, this species is one of the choicest of the evergreen Californian Lilacs. Where it will not succeed in the open it makes an admirable wall shrub, the very dark, glossy-green foliage being eminently attractive at all seasons.

The leaves are small, barely half-an-inch long, wedge-shaped and deeply toothed. They throng the rigid branches very densely, and in spring or early summer form a good background for the beautiful umbels of blue-violet flowers which are produced in extraordinary abundance closely among the leafage.

C. rigidus is undoubtedly one of the most distinctive of its race. It follows the Coast Ranges of California almost from south to north of that State where, along with other species, it often forms no small part of the "chapparral," or brush, which clothes those foot-hills. It was introduced to this country in 1847, but is not often seen in gardens.

The plant is rather tender and this undoubtedly accounts for its scarcity to some extent, but the shrub is also somewhat short-lived in some soils. It is, however, very easily propagated from cuttings, grows at a great pace, and blooms when only a foot or so in height. Its average stature is about eight feet.

BERBERIS JAPONICA.

It would be interesting and helpful to hear of anyone who really succeeds in growing this handsome Barberry well, and to learn what it is that the plant requires. A general complaint, both in gardens and nurseries, appears to be that most of the members of this group are difficult, sullen, and unresponsive. That has been my experience with them. Notwithstanding every care given it, B. japonica does not like our light, warm loam, and it looks equally unhappy in various other gardens round about here, where soil conditions are different. We are fairly successful with the variety Bealei, but even so, the leafage of this beautiful form is nothing like what it is described in books and catalogues, and the plant only manages to flower about every second year.

It is well known that Barberries of the Mahonia group dislike root-disturbance and take some little time to become re-established. Even with this case we cannot grow B. japonica in any form to our satisfaction, though B. Aquifolium, B. haematocarpa, and B. trifoliolata are tolerably successful. *J.*

NOTES FROM GLASNEVIN.

DIANTHUS ARBOREUS.

This is an interesting Pink from Greece and neighbouring countries where it inhabits rocky places and forms a twiggy, sub-shrub. A specimen has grown here for a good many years in a narrow border in front of the Palm House facing nearly south. In the open beds of plants in their natural orders it is not quite hardy and frequently perishes in winter, probably from too much moisture rather than from frost. In the drier position, a single plant has now become a mass of interlaced shoots, three feet to four feet across and three feet high, woody, and leafless below, bearing leaves above the shoots of the current year; these are round, green very slightly downy, more particularly at the nodes: leaves rich green, faintly glaucous on the upper concave surface, linear acute, tapering to the base, one inch to two-and-a-half inches long. The flowers are produced at the ends of the shoots, three to four together, but opening in succession: calyx, one inch long, teeth acute, bracts at the base acute, numerous, up to fifteen or seventeen; corolla, one inch or more in diameter, purplish rose; petals, toothed and bearing a few scattered stiff, deep purple hairs at the base of the limb.

The plant grown at Glasnevin was raised from seeds from an unrecorded source and agrees with the brief description given by Farrer in *The English Rock Garden.* Mr. F. N. Williams, F.R.S., in his Monograph of the Genus, *Linnean Society's Journal,* Vol. XXIX, p. 361, describes the leaves as three-nerved, a character I have been unable to make out in our plant. He also describes the petals as spotted (*lamina . . . maculata*), while Halacsy, *Conspectus Florae Graecae,* Vol. I, p. 201, confirms this (*lamina . . . basi saturatius picta*).

The fact is that many of the species are notoriously difficult to raise true from seeds; also cultivated plants growing in richer soil tend to lose the glaucous character, to become softer and lankier in growth, and less intense in the colour of the flowers.

In any case the Glasnevin plant, though not agreeing exactly with the descriptions of the two botanists quoted, is interesting from the fact that it flowers all through summer and into the winter.

GNIDIA POLYSTACHYA.

This attractive greenhouse shrub has been in flower for several weeks and is still in good condition. It came to Glasnevin from the Cambridge Botanic Gardens some ten years ago and was figured in the *Bot. Mag.,* t. 8001, from material supplied by the late Mr. Irwin Lynch.

A member of the natural order Thymeleaceae, which includes the Daphnes, G. polystachya is worthy of cultivation as a winter-flowering plant. It is described as capable of growing to a height of six feet in cultivation, branching freely, the branches being clothed with fairly long, whitish hairs. Leaves crowded on the younger branches, very narrow, acute and varying from one-eighth-of-an-inch to almost half-an-inch in length. Flowers yellow, in corymbose heads, at the ends of the short shoots, and so freely produced as to render the plant highly ornamental. Cuttings root readily and the young plants grow freely.

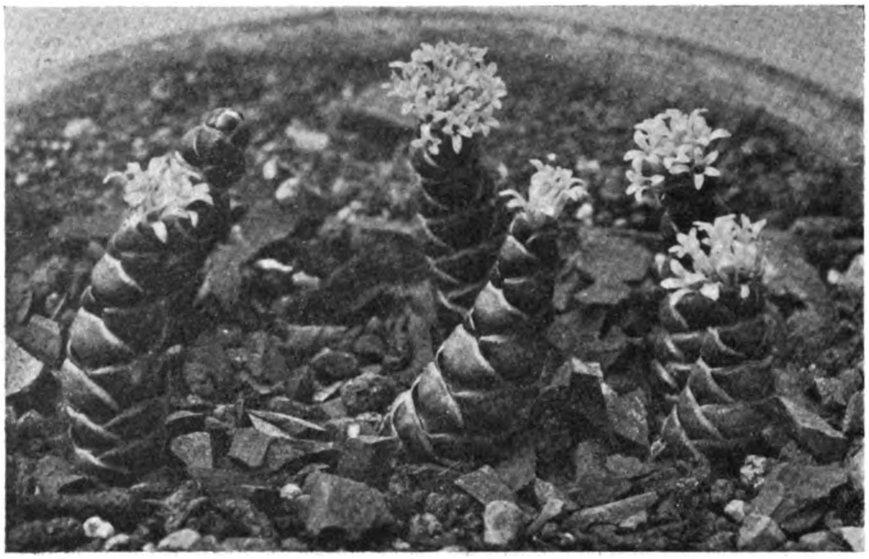


FIG. 334.—CRASSULA COLUMNARIS AT GLASNEVIN.

CRASSULA COLUMNARIS.

This interesting species (Fig. 334) belongs to the pyramidella section of the genus which includes also C. pyramidalis, C. semiorbicularis, C. multiceps, and C. Barklyi. The stems grow to a height of about three inches and are completely enveloped by the fleshy, closely-imbricated leaves: these are orbicular in shape, very blunt, the opposite pairs joined together at the base, the upper margin densely ciliate. The pairs of leaves being alternate results in a bluntly four-angled appearance. Numerous offsets are produced from the base of the older stems. The flowers are produced at the apex of the shoot in dense heads; they are small but numerous, the pure white corolla being deeply five-cleft.

C. Barklyi seems to be the species most nearly allied to C. columnaris, in fact, as grown here they are indistinguishable. In the *Kew Bulletin* for 1906, p. 19, Mr. N. E. Brown, F.L.S., describes the former as being smaller, with the leaves almost erect and adorned with brown spots; in C. columnaris they are slightly incurved.

All the species of Crassula are natives of South Africa and flourish in a light, airy house kept free from frost. A sandy, well-drained soil suits them admirably, and small pans are suitable receptacles to grow them in. During the growing season water may be supplied when the soil becomes dry, but during winter only enough to prevent shrivelling is necessary. *J. W. Besant.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard, 1543.*

Letters for Publication *as well as specimens of plants for naming, should be addressed to the* **EDITORS, 5, Tavistock Street, Covent Garden, London.** *Communications should be* WRITTEN ON ONE SIDE ONLY OF THE PAPER, *sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

NEW BOOKS ON OLD GARDENS.

By one of those curious coincidences which continually surprise us, two new books on early gardens have been published within a very short time of one another. The late Sir Frank Crisp's *Mediaeval Gardens*,* splendidly produced in two volumes quarto, has been followed by Miss Rohde's book,† which, although relatively a much smaller work, is also a beautiful example of modern book production, printed at the Chiswick Press. It is not claimed for either of these works that they are authoritative and exhaustive treatises upon their subjects; but both can be heartily recommended to all who love old gardens and plant-lore generally.

Sir Frank Crisp's book contains several hundred illustrations of Mediaeval, Tudor and Stuart gardens, preceded by an historical account of the various features of old gardens occupying one-hundred-and-twenty pages, a bibliography, and two indexes. This large collection of illustrations, gathered by the author over a long period of time, as a relaxation from his busy life as a solicitor, is not only a very valuable addition to the iconography of old gardens, but also of considerable general interest. The text embodies his notes on the subject, and shows that, although a keen lover of modern gardening (as his famous garden at Henley-on-Thames testified), he had a considerable amount of purely historical interest in the rise and development of gardens generally; and one regrets that he did not live to augment and bring into final form the work now published.

Miss Rohde's book deals with a selection of the old gardening books, commencing with Thomas Hyll's *A most briefe and pleasaunt treatyse*, 1563. Her Introduction contains a brief *résumé* on mediaeval gardens; but the one-hundred-and-thirty-nine pages which constitute the text are mainly occupied by an enthusiastic appreciation of Elizabethan and Stuart gardening books. Written with considerable literary skill, the five short chapters on these books contain a good deal of information, charmingly expressed, but err in being somewhat uncritical. For instance, Thomas Hyll, *alias* Didymus Mountain (whose portrait is reproduced as one of the sixteen fine collotype plates which are a distinct feature of the book), is well known to have been a hack writer, who wrote on dreams, physiognomy, mysteries, astronomy—in fact, anything to keep the pot boiling. Of course that does not discredit any intrinsic merits his books may contain; but it does raise a doubt as to whether his descriptions and illustrations may be taken as truly representative of Elizabethan gardens. Indeed, on page 13 we read: "One cannot help wondering where Hyll obtained these two designs, for curiously enough, exactly the same mazes are depicted in Du Cerceau's plan . . . "! However, one cannot be an enthusiast and fail to gather valuable information, especially in connection with such a fascinating subject as early gardens. In several instances some extremely rare or little-known pamphlets are mentioned, and we are indebted to Miss Rohde for calling attention to them. Chief in interest is perhaps: *Profitable Instructions for the Manuring, Sowing, and Planting of Kitchin Gardens . . . Gathered by Richard Gardiner, of Shrewsberie* (London, 1603), a pamphlet of thirty pages, which must be of considerable interest, although it contains no reference to the Potato. The author was a linen-draper of Shrewsbury, a public-spirited man, and deserves to be remembered by the town famous to this day as a horticultural centre. Again, in the bibliography at the end of the book, the full title is given of an anonymous work, *A short instruction very profitable and necessary for al those that delight in gardening . . .* (London, 1592), of which it is stated that the only known copy is in the library of the Marquess of Crewe, who has permitted one of the plans of Knot Gardens to be reproduced on page 107. Other points of interest are a drawing of an existing Elizabethan watering-pot; an extract regarding dishonest seed-merchants, called "caterpillers" by the above-mentioned Richard Gardiner; references to the prices of seeds, and to the wages of gardeners. Altogether, this pleasant book, in spite of a few minor inaccuracies, is distinctly a success within the limits imposed by its writer.

From a consideration of these two books the question arises: Have we any real idea of what an Elizabethan garden was like? As in the case of mediaeval gardens, we must admit that the sources from which our information is obtained are somewhat doubtful, and even if direct information can be gleaned, it is generally too vague to form any distinct picture. It is clear that certain features persisted, such as the "Herb Garden" (containing plants grown for use) and the "Orchard" (an enclosed "flowery mede," the real foreruner of our modern flower garden) of mediaeval times, which became the Elizabethan Kitchen Garden and Garden of Pleasure respectively. The mediaeval "Orchard" was a place to rest in, on turfed seats, or on the grass itself, which was promiscuously sown with various flowering plants, mostly wild. The gradual changes by which this form of garden eventually evolved into the Elizabethan Flower Garden are somewhat vague; but by the end of the fifteenth century, if not earlier, Knot Gardens had been introduced. It is, however, uncertain how far these curious Knot gardens were adopted. From early times the "Herb garden" appears to have comprised a number of small, square beds, arranged in chess-board fashion, often raised above the level of the ground; and this form of garden may well have been employed by many who were more interested in growing flowers for their beauty than in dividing up their "gardens of pleasure" into curious patterns. In fact, we must allow for a considerable amount of diversity of style, dependent upon the nature of the ground, the size of the house, and the tastes of the owner. Usually, the knots or beds appear to have been small in size, partly for convenience and partly because the number of cultivated plants was relatively small. Other features, such as labyrinths, mazes, pergolas, allies, topiary work, mounts, etc., would be introduced according to the owner's tastes, or purse. The sizes of gardens, according to J. Rea, writing in 1665, were twenty yards square for Flower gardens and forty yards square for Fruit trees; and thirty and eighty respectively for Nobleman! If these figures bear any relation to the sizes of earlier gardens, it must be admitted that even a Nobleman's garden was a small affair in Elizabethan times; but the figures are probably unreliable.

In connection with the foregoing, it is interesting to compare the writings of two well-known Elizabethans, Sir Henry Wotton (1568–1639) and Sir Francis Bacon (1560–1626). The former averred: "I must note a certain contrariety between building and gardening, for as fabricks should be regular, gardens should be irregular, or at least cast into a very wild regularity." Bacon's famous essay, "Of Gardens," first published a year before his death, gives a picture, not of a small garden, but "of a Princely Garden," to occupy thirty acres. It should be divided into three parts: first a Green, then the Garden proper, then a Heath "or Desart." The Green, leading from the house, was to be kept finely cut, have an alley (path) through it, and covered alleys at the two side edges. The Garden ought to be surrounded by a "Stately Hedge." The Heath was to be a "Naturall wildnesse," without trees, but planted with certain specially-named flowers. He dispenses with knots: "You may see as good Sights, many times, in Tarts." He makes a point of cultivating flowers for their sweet scents, and would have whole "allies" planted with "Burnet, Wilde-Time, and Water-Mints," so as "to haue the Pleasure, when you walke or tread." Many more things he would have, too long to mention here; but the above are quoted to show how a cultivated Elizabethan would choose for himself, and not be entirely led by what he found in the gardening books of his day. *S. Savage.*

---

* *Mediaeval Gardens, 'Flowery Medes,' and other arrangements of Herbs, Flowers, and Shrubs grown in the Middle Ages, with some account of Tudor, Elizabethan, and Stuart Gardens.* By the late Sir Frank Crisp, Baronet, LL.B., B.A. . . . Edited by his daughter, Catherine Childs Paterson. With illustrations from original sources collected by the author. 2 vols. 4to. (John Lane, London, 1924). £6 6s. net.

† *The Old English Gardening Books.* By Eleanour Sinclair Rohde. (The New Aldine Library, vol. V.). (Martin Hopkinson and Co., Ltd., 1924). 8vo. 15s. net. Whole natural Vellum £1 11s. 6d.

WATER GARDEN AT SEDGWICK PARK.

The illustration in Fig. 335 shows how a comparatively small pool of water may be made into a beautiful garden feature, for whilst a natural lake or pond planted with suitable aquatics and margined with moisture-loving shrubs and trees appeals most to lovers of gardens, a designed water garden may be made equally pleasing.

The special feature associated with Mrs. Henderson's water garden at Sedgwick Park is the closely-clipped panels of Yew and the "walls" of Yew at the boundary end, these appearing as solid and regular as though of masonry. The flagged path on the margin is in keeping with the general design, which includes a Japanese lantern and other stone ornaments, as well as vases and an imitation stork.

Such a spot provides a cool retreat in summer, where aquatics furnish plenty of bright flowers that are usually associated, in warm weather, with equally interesting bird and insect life. This particular water garden is situated on higher ground than the surrounding portion of the estate, and affords a view of the glorious landscape that is backed by the Sussex Downs, seen on the sky line.

PLANTS WHICH REMAIN STEADFAST.

DESPITE the wonderful advancement in all branches of horticulture, and the brilliant successes achieved by hybridists and plant-breeders there are numbers of very excellent plants which have been in cultivation for long periods of time and which, for some obscure reason, remain steadfast and apparently uninfluenced by any of the forces which make for what we are pleased to term development or improvement.

Salvia patens, for instance, unique in its wonderful purity of colour, grows to-day exactly as it did when first the veterans among us learned its name. There is, it is true, a white S. patens (alba), certainly in no respect a more desirable plant than the blue, but it seems passing strange that neither by spontaneous variation nor by the several methods usually adopted by plant breeders have we secured a distinct advancement in size, vigour, or those qualities which would justify the distinctive appellation of "grandiflora," for instance, nor a true patens variety of some other striking colour than blue. If ever there have been such distinctive varieties of Salvia patens they must have escaped general cultivation for all we see is still the old favourite, a plant of glorious beauty, and surely worthy of the attention of some expert plant-breeder. Agathaea cœlestis is another blue-flowered plant of charming character. It has been cultivated in this country for about 170 years, but it is one of the steadfast plants which gives us nothing sensational to add to our novelty lists. Why, I wonder, is it that we have not a salmon-pink or a bright crimson variety of so elegant a plant? Is it that these things have the power to defy the arts of the horticulturists, or is it rather that none has considered it worth while to try his hand and skill upon them?

FIG. 335.—FORMAL WATER GARDEN AT SEDGWICK PARK, HORSHAM.

That delightfully pretty flower, Asclepias tuberosa appears to make no headway despite its rich, uncommon shade of tangerine-orange. It is a plant one might have expected to come far toward the front rank of favourites, and to have been made the originator of a bewitchingly beautiful race; but no, it just exists in a comparatively few collections of choice subjects, and that is all.

The Astrantias, again, should surely be worthy of the attention of some patient rearer of improved forms. In an amateur friend's garden Astrantia carniolica grows finer and of brighter colour than ever I have seen it elsewhere, and even under the spreading branches of aged Apple trees the plants form masses of cheery green foliage and produce sheaves of strikingly beautiful and uncommon flowers from early June to August. Whenever I have seen my friend's Astrantias I have felt that here is a plant whose possibilities are sadly neglected, and whose quiet charms are too lightly esteemed.

Chaenostoma hispidum, a plant I had not seen for years except at Aldenham and Kew, until I espied it at Messrs. Wood and Ingram's nurseries last summer, is another instance of the steadfast plant, and in a double sense, for it is surely one of the most persistent blooming plants to be found in British gardens. Years ago I grew it in an unheated house, and the whole batch kept up an incessant display of their tiny but profusely-borne, starry white flowers for literally the whole year through, slight piecemeal pruning at intervals sufficing to maintain continuous growth and prolonged flowering. We have coloured species of Chaenostoma with which C. hispidum might surely cross to give us new and interesting varieties, and such plants would be a boon indeed to gardeners who have conservatories, corridors, etc., to keep perpetually furnished with plants.

Malva moschata and its albino form have made no advancement to compare with the considerable improvement effected in its near relatives the Sidalceas, of which we have numbers of distinctly good varieties, some being entirely the result of careful re-selection of superior seedling forms.

The two varieties of M. moschata are quite good, but whenever a large batch is grown it becomes apparent that in vigour, development, and clearness of colouring it is prone to fluctuate, and that is precisely the fact that indicates possibilities of great improvement by the process of rigid selection. New Malvas of real distinction would be very acceptable.

Ononis fruticosa, brought over from the Continent, I believe, so long ago as the sixteenth century is quite a desirable, dwarf-growing, flowering shrub, but it remains perfectly stationary so far as improvement is concerned, and it is one of those puce-purple flowers which many people consider a deadly dull tone. It is, however, a free-seeding plant, and from poorer material in other genera patient workers have succeeded in evolving delightful plants. We have vastly improved the Brooms, the Sun-Roses, and Rock Roses. Why is it we have no specially fine Rest Harrows? They would make serviceable subjects for banks, margins of shrubberies, or for the rock garden.

Origanum Dictamnus, "Dittany of Crete," is a very charming little plant with its panicles of Hop-like bracts and tiny blossoms. It is less grown in rock gardens than its beauty warrants, but is generally to be seen in the big groups of flowering and foliage plants, which are a great feature of the leading provincial shows. A variety which passes under the name of O. hybridum is usually seen, but it has always puzzled me that such an extremely elegant plant has failed to become the object of very special attention at the hands of the breeder of plants. Some twenty-five years ago I made the acquaintance in Scotland of a much superior plant, which bore the name Origanum Tournefortii. Its distinctions were larger dimensions in all its parts, still, however, retaining its extreme elegance, and a considerably livelier colour, reddish-violet and amber, being, if my memory is accurate, the word description of its tints which, however, were decidedly more pleasing than such words would suggest. I have made many enquiries of late years for O. Tournefortii but have failed to discover it. My conviction is that even with the easily available material the men who have given us so many wonderful new plants of widely varying character would score fresh triumphs here, and Origanums of superb quality could be raised to create quite a stir.

The few plants I have touched upon by no means comprise a list of all that might be similarly dealt with, but my purpose is not to assume the role of director but rather to open up a train of thought, and perhaps provoke discussion as to the desirability of diverting some of the persevering effort of plant breeders from the well-beaten course of making more of those plants which we already possess in endless variety, and turning it in the direction of developing some of these steadfast plants which have remained in the background.

Without directly naming this family of plants or that, lest it should savour of ingratitude for what has been done, it may legitimately be suggested that there are subjects of which existing varieties are ample for the needs of the present and near future. New varieties of some plants appear at such a rate that we tend to lose our capacity for wonder, and that is a far step toward loss of the power of appreciation. Would it not be prudent and advantageous to horticultural progress to create entirely new interest by taking in hand some other subjects which have thus far been treated with apparent indifference, or perhaps taken as a matter of course.

Quite possibly I am in error in supposing that none of the particular plants I have mentioned has been put to the test, but if some reader has information to give which will show why a particular plant will not respond to the efforts of the hybridist or the selector it would be in the interests of horticultural progress to give such information. Secretiveness in such matters is no more beneficial than the promulgation of false teaching, for it clogs the wheels of progress, and horticultural progress is esssential to the well-being of the individual as well as to the fraternity. *A. J. Macself.*

HARDY FRUIT GARDEN.

BEES AND APPLE FERTILISATION.

Talking recently to a reverend gentleman who is a keeper of poultry, pigs, and bees, and an enthusiastic gardener to boot, I gathered that in his experience neither poultry nor pigs did more than pay their way, if that, but the busy bees showed a pleasing profit. From such a material matter as cash the conversation turned in the more interesting, if less useful, direction of the value of bees in the cross fertilisation of outdoor fruits.

Personal observation of bees in some of the commercial fruit gardens of Cambridgeshire and the Isle of Ely, in which Apples and Plums largely preponderate, and Pears are found here and there, had lead me to the conviction that these insects assisted the growers to an incalculable degree to a good set by distributing pollen. This view is held, too, by, I believe, most, if not all, trained observers. I alluded to it as a merit mark which ought to be accorded to the bees in addition to the credit of earning money by the manufacture of palatable, nutritive and medicinally valuable honey. My friend's commendation on this point was, however, no more than half-hearted, for while agreeing that the bees worked assiduously in Peaches, Pears, Plums and small fruits, he affirmed that they displayed no similar, or even approximate, partiality for Apples; indeed he went so far as to say that he had never seen bees in his Apples. As one who has grown fruit, but who has not kept bees, in discussion with another who has done both, my dissent from this conclusion was tempered by a proper respect.

The problem before me at present is, do bees assist in the fertilisation of Apples? There must be scores of readers of *The Gardeners' Chronicle* who grow Apples and keep bees, and an appeal is made to them to answer the question from their personal experience. It is a matter of very considerable importance to commercial Apple growers who are being advised to establish apiaries in their plantations. Expenses are heavy enough now in all conscience, and it is unreasonable to urge that they shall be increased substantially unless the prospects of a remunerative return are at least fair, if not positive. In the meantime, I shall seek information on the subject from bee-keepers and fruit-growers in my own district, and will report results in due course. *W. T.*

THE ROSE GARDEN.

SPORTS OF ROSE PREMIER.

According to the *American Florist* a number of sports have originated from Rose Premier, and one, the name of which is not given, is said to have light pink blooms of the shade of Enchantress Supreme Carnation and was awarded a Gold Medal as the best new American Rose at the fifth National Flower Show at Indianapolis in competition with six rivals, amongst which was America. The flowers as exhibited were said to have been superb, but the variety soon dropped out of favour, as its colour was considered to be too light.

Another similar sport, but of a darker shade is being tried by Mr. William Monroe, Drexel Hill, Pennsylvania. An illustration of a very fine Rose and a market house of the same is given in the *American Florist* of the variety known as Red Premier, which originated with Messrs. Robert Scott and Son, Sharon Hill, and to which a short reference was made on p. 319. This variety is said to have remained true for over three years, has the vigorous growth of its parents and is very free. The colour is described as a velvety cardinal-red on the inside of the petals, the outside shading to carmine. The blooms as shown in the illustration are of beautiful form and the buds are long, being ideal for florists' purposes when half expanded. In addition to the other qualities it possesses, this variety is delightfully fragrant. It is said to be quite different in shape from Premier, and the colour is, of course, dissimilar. It is predicted that it will prove one of the best Roses for forcing, and is at its best during December, January, and February.

THE WISLEY ROSE AWARDS.

The list of awards to varieties given to Roses grown in the new trial grounds at Wisley proves of great interest, particularly because this is the first time, in this country, that awards have been given to varieties after undergoing what appears to be a fairly comprehensive test in company with the standard sorts. It is impossible until a detailed list has been published to criticise the findings of the Committee, and while there are certain varieties which we are rather surprised not to find included in the awards, this may be accounted for, as the report (see p. 413) states that some varieties were not seen at their best and others have still to fulfil the time limit of two years—a period which all will agree is essential before the merits of a Rose for garden decoration may be ascertained.

Whether the council have done wisely to divide the Wisley Rose award into two grades time will prove. There does not appear to be any apparent reason why such a classification of the awards should not meet with the approval of all, but it should be insisted upon that the nurserymen or grower should state the class (whether first or second) if he should desire to make use of the award in cataloguing or advertising a variety which has been so honoured. The Wisley Rose award is, of course, distinct from the Award of Merit which the Floral Committee is empowered to bestow on varieties which are judged mainly for the quality of the blooms, regardless as to whether they will prove to be suitable sorts for garden decoration.

The varieties in Class I of the double and semi-double varieties are sufficiently well-known for the reader to be spared a description, but in point of age Betty Uprichard, which has been magnificently shown throughout the season, is the youngest, having been put into distribution only two years ago. On the other hand, the eldest, Mrs. Wemyss Quinn and Red Letter Day, share the distinction of making their appearance ten years ago. Of the five varieties in this class — Hawlmark Crimson and Christine in addition to three already mentioned—the Gold Medal of the National Rose Society has also been awarded to three, and although there are some who would have us believe that this latter award counts for nothing and that a growing test is the one and only method of discriminating between a good and a bad Rose, it goes to prove that a Committee of experts may not be far wrong in passing a verdict simply from a specimen flower and a maiden plant or two.

As to the nine varieties in Class II of this section, there are a few which are not very familiar, yet such varieties as Lady Pirrie, C. V. Howarth, Mrs. Bryce Allen, and Lamia are fairly well-known. Here again four out of the nine varieties have previously received the Gold Medal of the National Rose Society. Taking both classes together, Messrs. Alex. Dickson and Sons, Ltd., have gained no fewer than eight awards, seven with varieties of their own raising, and one, the French variety Madame Jules Bouche, of their introduction—a Rose which has done remarkably well at Kew this year. Such a feat testifies that, as with other flowers, there are hybridists who have the happy insight of judging the value of a Rose before they place it on the market, and possess an ingenuity of providing the public with what they want.

It is pleasing to note that the Polyantha section has been recognised, but none of the five varieties selected was evidently of sufficient merit to be placed in Class I. Most of the varieties were of French origin, excepting one, Pink Delight, which to all appearances may be likened to a dwarf American Pillar, and was raised and introduced by Messrs. Laxton Bros.

THE EUCALYPTUS PSYLLA.

EURHINOCOLA EUCALYPTI (MASKELL).

The attention of gardeners is drawn to the presence of a Psylla on blue Gums (Eucalyptus Globulus). This pest is allied to the Apple Sucker (Psylla mali), Schmidbg., and appears to be spreading to a great extent in Britain. It has been submitted to Wisley for identification from such widely separated areas as Felixstowe (1922), Leamington (1923),and Handcross (1924), and it will probably be found wherever its host plant is grown.

Maskell was the first to describe this species and figure all its stages (*Trans. New Zealand Institute*, Vol. XXII., 1889, pp. 160 – 162). The first record in this country was made by Mr. F. Laing, M.A. (*Entomologist's Monthly Magazine*, Vol. VIII., June, 1922, p. 141), from material submitted by Dr. Hugh Scott, who obtained specimens from a nurseryman at Felixstowe. Mr. H. Britten (Hope Museum, Oxford), has reared this species through all its stages from specimens obtained at Headington Hill House, Oxford.

The only species of Eucalyptus on which this species has so far been recorded is the Blue Gum (Eucalyptus Globulus), but a tree of E. cordata was found to be severely attacked in Sussex during July, 1924. These Gums are natives of Australia and Tasmania.

It is a difficult problem to account for the spread of this pest. Mr. Laing informs me that in South Africa, though the Blue Gums may be raised from seeds many miles away from existing plantations, yet the plants so raised speedily become attacked.

This pest is not particular about the seasons, eggs, larvae, and adults being found at any time of the year, though in cold weather the larvae and adults are sluggish. In some parts of the country the Gum plants are moved into glasshouses during the winter months, and under these more favourable conditions the insects increase to an alarming extent.

Maskell (*ibid*) reports that this Psylla does not seem to do any damage to the tree, as the young leaves exude a quantity of white, aromatic, gummy matter on which the Psyllids feed, so that the leaves are not damaged. Unfortunately the reverse is found in this country, especially on plants growing under glass, as the leaves become covered with the sticky exudations on which grow species of "sooty" moulds, causing the plants to suffer considerably by interfering with the normal functions of the leaf.

The youngest shoots are the favoured portions, and eggs, larvae, and adults are found congregated on the leaves, stems, and in the axils of the leaves, the spaces being filled with their loose, white meal.

The larvae (Fig. 336) are flattened dorsoventrally in the typical psyllid form. They are active and live gregariously, surrounded by masses of thin, cottony threads. Their appearance is yellowish, although they possess light purplish areas. The head is broadly rounded and the body is scantily clothed with short hairs and bristles.

The nymph stage (Fig. 336) is also an active one, and they live together in colonies, surrounded by a light mealy covering. The general appearance is dark on account of broad, dark-purplish patches on the head, thorax, and abdomen. The wing buds are clearly visible, and there is no conspicuous body fringe, although the abdomen bears some spines.

The adult is about one-sixteenth of an inch long with a dark purplish body alternated, on the abdomen, with yellowish bands, and the thorax is covered with a whitish meal. The eyes are prominent and dark brown, and the forewings are long and narrow.

Remedial measures include ((i) spraying the affected portions with nicotine and soft soap, using one-third ounce of nicotine (ninety-eight per cent.), and six-and-a-half ounces of soap to four gallons of water. It is essential to success to direct the wash into the angles of leaf and stem, and to aim at the undersurfaces of the leaves; and (ii) fumigation may be carried out with success on plants growing under glass. Success will attend the use of nicotine vapour or hydrocyanic acid gas. Two fumigations are necessary so that the larvae are killed as soon as they hatch from the eggs, in which stage the pest is immune from the effects of gas. *G. Fox Wilson, Wisley, Surrey.*

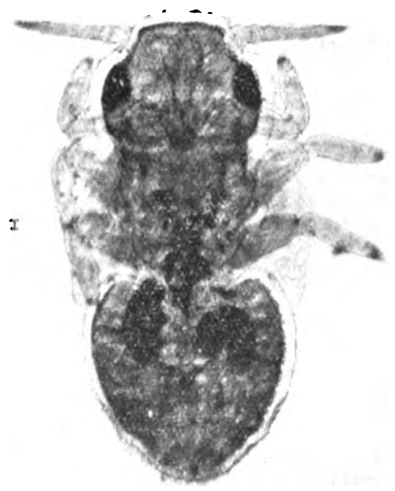


Photo by N. K. Gould.

FIG. 336.—EUCALYPTUS PSYLLA.
Larva showing ventral view.
Natural size—1/32nd inch.

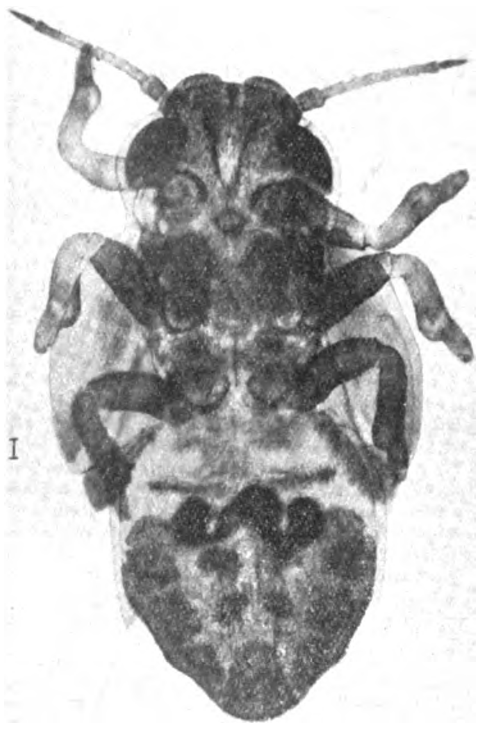


Photo by N. K. Gould.

FIG. 337.—EUCALYPTUS PSYLLA.
Nymphal stage, showing wing buds, dorsal view.
Natural size—1 16th inch.

FLORISTS' FLOWERS.

EXHIBITING LARGE JAPANESE CHRYSANTHEMUMS ON BOARDS.

Readers who are interested in the exhibition of large Japanese Chrysanthemum blooms of high quality will, doubtless, recall the controversy of some years ago in regard to the method which then obtained of setting up cut blooms on green-painted boards of given dimensions.

In earlier days, when blooms of the Japanese Chrysanthemum attained only moderate proportions, a dozen blooms could be quite comfortably accommodated on boards twenty-four inches wide and eighteen inches deep, from back to front (with holes six inches apart from centre to centre), and to stand six inches high at the back and three inches in front.

Green-painted boards of the foregoing dimensions were used at exhibitions for many years; in fact, until blooms became so large that it was impossible satisfactorily to arrange the blooms on such boards.

The expression of the views of many growers led to the National Chrysanthemum Society altering its regulations in regard to the size of exhibition boards, and laying down the rule that "boards for twelve Japanese blooms should be twenty-eight inches from left to right, and twenty-one inches deep, from back to front; holes for the tubes seven inches apart from centre to centre. The height at the back to be seven inches and four inches in front." This new regulation came into general use by Chrysanthemum Societies throughout the country. Most growers were loud in their praise of the vast improvement effected by the larger space allowed to each individual bloom. It became possible to inspect the whole of the blooms and less easy for the exhibitor to cover up the deficiencies of stale and otherwise defective flowers.

But in due course there came a period when even these larger boards failed to meet the requirements of the immense blooms that raisers and growers exhibited, and at length there was an outcry against the use of the boards on which the leading growers of the day were accustomed to present their triumphs of cultural skill. Then it was that the suggestion was made that the only satisfactory method of displaying the real beauty of these magnificent specimens was that of arranging them on long stems, individually, in vases, or, as an alternative, setting up three such blooms in larger vases. The change appeared to be a great success, and was generally welcomed by Chrysanthemum Societies throughout the country.

It cannot be denied that the large blooms of Japanese Chrysanthemums exhibited in the leading classes at the more important Chrysanthemum shows to-day are impressive, and however much certain people may be opposed to these "big" blooms, they have to admit that such flowers are triumphs of cultivation.

Few growers, however, appear to be able to arrange these flowers so that the whole of each individual bloom may be seen. Occasionally an exhibit of this kind leaves nothing to be desired, but more often than not the large, massive flowers rest against each other.

There are Chrysanthemum societies whose committees are not fully satisfied with the method of exhibiting blooms of Japanese Chrysanthemums in vases as observed today, and they are striking out a course of their own, in the hope that they may be able to solve the problem which has for so long given them concern.

In November last the Hull and East Riding Chrysanthemum Society pot together one of the most attractive Chrysanthemum Shows of the past season. This Society had several somewhat unique competitions, and they were all commendable. This season they broke away from the orthodox in regard to the class for twenty-four Japanese blooms, arranged on green painted boards. Their regulations provide that, "for the Japanese blooms boards of the following dimensions must be used:—For six blooms, thirty-six inches back to front, seven inches high at back, three inches high in front, and twenty-four inches wide; for twelve blooms, thirty-six inches back to front, seven inches high at back, three inches high in front, and forty-eight inches wide; two "twelve" boards may be used for twenty-four blooms."

There were four competitors in the class for twenty-four Japanese blooms in not fewer than eighteen varieties, and each exhibit occupied a table space of eight feet frontage, the four exhibits covering a table space of at least thirty feet by two feet.

The judges were asked to express their opinion regarding the larger boards used on this occasion. Only one opinion could be expressed, and this was that the larger boards were a great success, in that they enabled the judges and the public to inspect each flower in each exhibit, and each bloom was seen to great advantage. Boards of the measurements set forth allowed each flower one square foot of space and although the flowers were unusually large it was possible to inspect and appraise each bloom, notwithstanding some of the flowers were almost one foot in diameter. I have never seen blooms of Japanese Chrysanthemums so advantageously staged.

Japanese Chrysanthemums of the most up-to-date kinds are so large both in breadth and depth, that it is necessary that some improved method of exhibiting them should be generally adopted. At the Hull Show blooms of popular Japanese varieties such as Mrs. Algernon Davis, Louisa Pockett, Majestic, Wm. Rigby, and others were so large and handsome that they were only just comfortably accommodated on these large boards. One exhibitor staged, as an example, on a small board, two large blooms with their own foliage, but I am rather disposed to think that blooms staged in this fashion would not last long in a warm and crowded exhibition hall.

I think the Hull people have solved a problem; in any case, they have demonstrated most effectively that large blooms of Japanese Chrysanthemums can be better inspected and appreciated by the general public when set up on boards as described. By the use of the larger boards fewer classes would be required to make up an exhibition, and this would enable the societies to offer more attractive prizes. Growers complain of the cost of transporting large blooms with extra long stems to the shows, whereas even though the flower stems are longer on the blooms shown on the larger boards, they would be less cumbersome to transport, and the flowers could be utilised for decoration subsequently. The Hull experiment might with advantage be adopted elsewhere. *D. B. Crane.*

NEW CHRYSANTHEMUMS.

The Floral Committee of the National Chrysanthemum Society has met on eight occasions during the present year and has considered the merits of no fewer than one-hundred-and-one novelties placed before it.

The busiest session was on November 6, the opening day of the Society's great exhibition at Westminster, when no fewer than forty novelties were submitted. The next most important meeting was on November 17 when nineteen novelties were presented for awards.

The varieties submitted were, on the whole, of very high standard, and a total of thirty-five First-Class Certificates were awarded and four Commendations. Although flowers of large exhibition size met with due reward, it is of interest to observe that a very large proportion of the Certificates granted were in favour of varieties of the decorative type.

PUBLIC PARKS AND GARDENS.

The Urban District Council of Newburn has decided to proceed with the construction of a bowling green and tennis courts on the housing assisted scheme site at Leamington. The estimated cost is £2,200.

The Town Council of Torrington has instructed the surveyor to submit an estimate of the cost of providing a bowling green, putting green, and tennis court at Spring Terrace Field, North Shields.

The Urban District Council of Hornsea has approved of plans for the lay-out at the north end of the promenade. The scheme includes the construction of four grass tennis courts.

The Town Council of Bridlington has agreed to expend £600 on laying down an additional bowling green.

Chorley Town Council has received sanction from the Ministry of Health to borrow £4,337 for the acquisition of an area of land on the northerly side of Astley Park, to be enclosed with the park.

The Ministry of Health has sanctioned a loan of £4,192 for the construction of tennis courts, bowling green, and a pavilion at Alkincourts Park, Colne.

The Urban District Council of Heckmondwike has resolved to make application for sanction to borrow £600 for laying down three hard tennis courts at the recreation ground.

An expenditure of £700 has been approved by the Kent County Council for the purchase and equipment of a recreation ground at Minster. The same body has also approved an expenditure of £650 for the provision of a recreation ground at Snodland.

Negotiations are in progress between the Redditch Urban District Council and the Plymouth Estates, Ltd., for the purchase of fifty-four-and-a-half acres of land for a public park.

Plans are being prepared for a recreation ground at Twickenham on a portion of the Jubilee Farm estate to include a temporary bridge across the Crane.

The Public Works Committee of Walsall recommends the purchase from the Vicar of Dudley, for £2,359, of about fifty-one acres of land at Delves Green, and from Messrs. T. A., R. J., and S. Smith, for £3,300, of about twenty-four acres of land and buildings which comprise the golf-club pavilion. The intention of the Council is to utilise the land for sports and games.

About five-and-a-half acres of land are to be purchased at Mill Hill, Hendon, for a recreation ground.

Lowestoft Town Council Parks and Properties Committee recommend the Council to purchase a portion of the Normanston Hall Estate, including the Hall, and approximately forty-three acres of land, for £4,500, for the purposes of a Park and Recreation Ground, subject to the conditions specified in the offer made on behalf of the owners of the property, and the Minister of Health will be asked for a loan of £5,500 for the proposed purchase, this sum to include £1,000 for road-making, fencing, and incidentals.

MARKET FRUIT GARDEN.

Although there were two spells of fine weather during November, each of them lasting over a week, rain fell so heavily on the remaining eleven days as to bring the total precipitation for the month up to 3·81 inches. This made it the wettest November since 1916 at my place. A certain amount of planting is being done during the fine periods, but not by any means under ideal conditions, the soil being decidedly on the wet side. Fortunately I have not much of this work to do this winter. There is plenty of other employment in the way of ploughing, digging, and pruning, and some progress has been made with all three operations.

The Manure Problem.

The question of what manures to buy for the winter dressing of the plantations has to be decided now, and it needs careful consideration after a bad season, when economy is necessary. I shall, of course, use all the farmyard manure that can be obtained locally within reasonable carting distance; but that is not likely to amount to much. London stable manure, made from straw or peat moss litter, would cost 13s. 6d. per ton delivered at my nearest railway station, and is, therefore, quite out of the question. Shoddy would work out a good deal cheaper per acre. I like this well enough for trees, but not so much for bush fruits. The latter do well on it; but it lasts so long in the soil that it is apt to be dug up, full of roots, in the following winter.

Shoddy does not disappear like farmyard manure, and, of course, it supplies nothing beyond ammonia and organic matter, and should be supplemented by phosphatic and potassic fertilisers of some kind. Next to local farmyard manure, one of the cheapest organic materials that can be bought seems to be meat-meal; and I shall probably use a good deal of this fertiliser for Black Currants. It supplies ammonia and phosphates, and needs only the addition of a potash fertiliser to make a complete manure. Meat-meal has always given me good results in fruit cultivation.

Making Manure.

I am converting several tons of rough litter from headlands into a substitute for farmyard manure by the Adco process discovered at the Rothamsted Experiment Station. It is an interesting business. The nitrifying bacteria, I understand, are always present in the litter, and merely require food and moisture to enable them to set to work to break down the material and convert it into a very close imitation of farmyard manure. The necessary food is supplied in the form of a special chemical mixture which is not at all expensive. As the litter was made into hay long before I thought of converting it into manure, a surprising amount of water has to be used to moisten it. However, there is not much difficulty about this, as the heap has been built up close to a pond, and a power-driven orchard spraying machine is used to throw the water on to the heap. The quantity of water necessary would, however, be a serious drawback in less convenient circumstances.

Another year I shall have all the litter from the headlands and hedgerows cut and carted as green as possible, so that it may be made into manure without the addition of water. The chemical accelerator supplied for treating green material is cheaper than the standard accelerator necessary in the case of dry hay or straw, and the process is much less laborious. This process is being used in gardens to convert green vegetable refuse into manure.

WINTER SPRAYING.

I have seen such striking results on other fruit farms from winter spraying with the new carbolineum or tar distillate washes, that I shall have to try some this year. At last we really have been supplied with a winter wash that destroys the eggs of aphides and a good many of those that give rise to caterpillars. The material is costly, but is not prohibitive if its use obviates the need for nicotine spraying in spring, as many growers have found. I intend to use it particularly on Plums, because the leaf-curling aphis on these is most difficult to control in spring. I shall try it also on some young Apples which are now smothered with the eggs of the permanent Apple aphis. This spraying should be done in December or January, as the solution has to be used very strongly, and would be harmful if the trees were not quite dormant at the time of application.

Other trees will probably be sprayed with lime-sulphur with calcium caseinate spreader, applied as late as is dared before the opening of the buds. It will be remembered that this treatment was very successful in preventing the hatching of aphis eggs on trees in pots at the Long Ashton Research Station. I have not heard whether it has since been put to the test under ordinary orchard conditions. If it succeeds it will certainly become very popular, as lime-sulphur is much cheaper than tar distillate, and is a good fungicide into the bargain. Lime-sulphur alone has, of course, long been in common use as a winter wash. The addition of calcium caseinate improves its wetting and spreading qualities, and apparently enables it also to act in some way on the eggs of aphides so that they do not hatch. It will not do to place too much reliance on this result, but it is well worth trying.

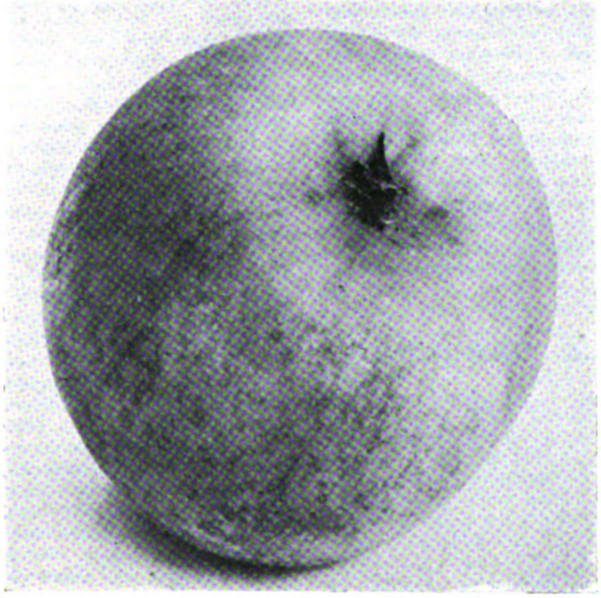


FIG. 338.—APPLE BARNACK ORANGE.

PRUNING PLUMS.

Pruning has started with Plums, because these become active earlier in spring than Apples. The work on the older trees is confined to thinning out the new shoots where they are crowded, and removing dead and broken branches. It is not advisable to make more large wounds than can be avoided, because these are so likely to allow silver-leaf disease to enter. All such wounds are promptly dressed with coal tar; Stockholm tar has been found to be almost useless for this purpose. Silvered branches on otherwise sound trees were marked during the early summer with a ring of white paint, and these are now being sawn off and burnt. It is to be feared that this does not very often save the tree, but it is worth attempting. Trees that are silvered all over may just as well be left until they show signs of dying back, for they occasionally recover, and in any case may continue to bear fruit for a year or two. They are not a danger in the orchard until they begin to die back, as the silver-leaf fungus cannot spread until its fruiting stage appears, and that is not until the wood is dead. Plums have made strong growth this year, no doubt because most varieties carried so little fruit. They should bloom well next year.

REDUCING HAND CULTIVATION.

Two of my plantations of Apples have now been under "sod strip" culture for two years, and so far I have not been able to trace any influence, good or bad. Horse cultivation goes on, as usual, between the rows, but the actual rows of trees stand on strips of grass about four feet wide. This grass is mown twice in the season and left on the ground. The object, of course, is to avoid expensive hand hoeing and digging. I expected that the fruit would show the influence of the grass in higher colour and smaller size, as it does in an orchard that is grassed all over. So far it has not done so; the Apples have been exactly like those from trees under clean cultivation. Nor have the trees shown any sign of disliking the grass strips. Apparently the cultivated alleys between the rows answer all the purposes of clean tillage, at any rate, in a wet season. It might be different in a dry summer. The plan gives, of course, a somewhat untidy and neglected appearance to a plantation, except when the grass has recently been cut, but this cannot be helped. Most growers are finding it necessary to reduce labour expenses by adopting some means of obviating hand cultivation, the running of pigs or poultry beneath the trees being a common solution of the difficulty.

PIGS UNDER FRUIT TREES.

I was recently privileged to see the method of cultivating orchards by means of pigs as carried out on a very extensive scale in Messrs. W. Seabrook and Sons' commercial plantations near Chelmsford. The land, mainly under bush Apples and Black Currants, is divided into long, narrow pens by fences of pig netting permanently fixed in the direction of the tree rows. The necessary cross fences that close the ends of the pens are only temporarily fixed against the pens actually occupied by the pigs, and are shifted when the pigs move into the next pen. Quickly-erected shelters made of straw-thatched hurdles house the pigs at night, and food is given dry from self-feeders. In about three weeks the pigs clear a pen of grass and weeds, turning over the ground very thoroughly. They are then moved into the next pen. After they have been over the land, it is levelled down as far as possible by ploughing between the rows. No hand cultivation whatever is done, and no manure has to be bought. The pigs are sold off at about sixteen weeks old, and up to that age they do no harm whatever to the stems or branches of the trees, and very seldom disturb a Currant bush, although they work deeply in wet weather and lay bare a root here and there. Some of the land has now had the treatment for five years, and the trees have increased in vigour and yield. The Apples carried a heavy crop of fine fruits this year, and certainly look very well, whilst the Currants make remarkable growth. Mr. W. P. Seabrook considers that if only a grower can steel his heart to put up with the weedy state of the land before the pigs go over it, and its rough appearance just after they have finished, the system provides a successful solution of the problem of manuring and cultivating established fruit plantations. Without the pigs the trees would soon "go back" if the land was grassed down; with the pigs they actually improve. Clean cultivation is, of course, necessary until the trees are about ten years old.

On other fruit farms I have seen pigs used in a different way. The land is grassed down and the pigs are run more thinly with the object of getting the grass grazed down without turning up the ground. This plan is more suitable for orchards of standards or half-standards, which can put up with grass permanently over their roots; but I have seen it successfully employed amongst very large old bush Apples, which were said to be improving under the treatment. *Market Grower.*

FRUIT REGISTER.

APPLE BARNACK ORANGE.

AT the meeting of the Royal Horticultural Society on November 18 last, Mr. W. H. Divers exhibited a very attractive-looking Apple named Barnack Orange, which the Committee recommended for trial in the commercial varieties of fruits at Wisley. It is an Apple of promise and a good keeper, whilst the flavour is of good average merit. We are indebted to Mr. Divers, the raiser, for the following description :—" Barnack Orange was raised from Barnack Beauty crossed with Cox's Orange Pippin. The fruits are very even in shape, three inches wide and two-and-a-half inches high; they are very globular at the base. The eye is large, open, and set in a shallow basin; the calyx segments are long and broad. The stalk is half-an-inch long, thin, and set almost level with the base of the fruit. The skin when ripe is of an Orange colour, heavily shaded, and striped with dark red, especially on the sunny side. The flesh is deep yellow, firm, juicy, and of good flavour. This variety keeps well during December and later. The tree is a good grower, and bears well; the foliage is of moderate size, and partakes of the characters of both its parents."

CHRISTMAS PLANTS IN COVENT GARDEN.

THE question whether plants or cut flowers are the most useful for Christmas decoration can never be answered, simply because tastes vary and plants cannot always be used in particular positions where flowers may be both desirable and suitable. Nethertheless, there is a great deal to be said in favour of plants, as against flowers, for Christmas gifts, and the principal point in their favour is that plants last far longer in beauty than the cut flowers. For this reason plants have grown greatly in favour as gifts at Easter and Christmas, on birthdays and other occasions, and, after all, there are few gifts more beautiful and acceptable than a well-grown plant, whether it be a graceful foliage subject or a brilliant or dainty flowering one. So we find the skilful growers who supply Covent Garden market and, through the market, the florists in all parts of the country, set themselves out to produce flowering and foliage plants for the Christmas season.

A stroll through Covent Garden at this period of the year reveals the beauty and variety of the plants grown and the exceptional skill of the plantsmen. Heaths are a prominent feature just now, and rarely has Erica hyemalis been seen in such splendid condition, while E. gracilis, E. g. nivalis and the elegant E. melanthera are all equally well cultivated. Time was when these plants were seldom seen other than in 48-sized pots, but now the plants range in size from the tiny fairies, or "babies," in wee pots, up to big specimens in large 32's. These tiny plants of Erica gracilis nivalis and also those in 60-sized pots, invariably sell well and very often the supply is unequal to the demand. In passing, it may be observed that those who would keep Heaths in beauty so long as possible, should not subject them to the influence of gas, nor allow them to remain long in a hot and crowded room.

Chrysanthemums in pots are very attractive, and it is always a source of wonder how the growers manage to produce a fine specimen by placing four-rooted cuttings in a 48-sized pot. The colours range from white to crimson, but pink and deep bronze varieties are those most sought after. Cinerarias are offered for sale, but are not so good now as they will be in the early spring. The dainty Primula malacoides has become popular and is now grown for Christmas decorations in small pots. Equally delightful are the Cyclamens grown in 60's and carrying from three to twelve flowers, ranging in colour from white through pink to salmon and rich crimson. Orchids are not often offered for sale in the market, but of late there has been a fair supply of Cypripedium insigne in 4½-inch pots. Taller subjects, such as Lilium speciosum and Poinsettias are to be found in smaller numbers.

Hyacinths from "prepared" bulbs sell freely at this period, either singly in 60-sized pots or three together in 48's, and these never fail to find buyers. Azaleas invariably attract attention, but whereas these used to be grown only in 48's, they are now sold in a smaller size, in 3-inch pots, and they are particularly delightful in this condition when they carry half-a-dozen bright blooms. In addition to pot plants properly so-called, hosts of Tulips and Roman Hyacinths are 'grown for the Christmas market, and these arrive in shallow boxes. The dwarf Duc van Thol Tulips, white, red, or yellow, are especially useful for filling fancy bowls and other receptacles for the decoration of the dinner table and the ballroom during the festive season. A new-comer at this time of the year—as a pot plant—is Iris tingitana, 'and as this provides blue colouring, otherwise rare among Christmas flowering plants, it sells readily but is somewhat expensive.

Solanums are grown in enormous quantities for the Christmas sales, and here also the growers have discovered how to grow and fruit the plants in a quite small size. Cacti, too, are sold in small sizes and in tiny pots, sometimes even in tiny greenhouses, a few inches in height and length. Miniature gardens designed in pans or trays are quite pleasing, quaint and attractive; these are of Japanese type, but of English production.

Thousands of foliage plants are sold for Christmas gifts and probably the most popular are the Kentias, of medium size, and the plumose forms of Nephrolepsis. Although more costly, Phoenix Roebelinii and Cocos Weddelliana find favour among those who appreciate the lightness of their foliage. Araucarias, Aspidistras, Dracaenas, small Cordylines, Codiaeums, Asparagus plumosus and A. Sprengeri are sold in large numbers and quite a few Bay trees in varying design change hands as Christmas gifts. Literally myriads of small Ferns of many kinds are disposed of during the festive season and sold chiefly as small plants in trays. These are used extensively for filling dainty bowls and fancy ornaments for table and other decorations. Finally, there are the Christmas trees, varying in height from midgets scarcely more than a foot tall and sold in bundles of a dozen, up to giants of twenty-five feet and over. These last are purchased for big hotels, for steamships that will be at sea on Christmas day, for hospitals and for special public functions. Most of the Christmas trees come from Surrey and the woodlands of the eastern counties, but some come from the Continent.

VEGETABLE GARDEN.

RUNNER BEANS.

THE lifting and storing of the fleshy roots of Runner Beans is not practised in many gardens. Some growers maintain that earlier and more abundant crops may be obtained by planting the old roots than from seeds. This is a question that can only be solved by experience.

I do not remember seeing a record of the longest Scarlet Runner Bean in *The Gardeners' Chronicle*. We gathered a Bean here eighteen-and-a-half inches in length of the variety Prizewinner. Our plants were raised from seeds sown under glass and planted out in a prepared trench during the last week in May, protection being afforded them until danger from frost was over. The Bean referred to was picked from a row of plants grown for kitchen supply, not for exhibition purposes. *C. Ruse, Hyde Gardens, near Luton.*

EXHIBITION ONIONS.

EARLY in January secure some shallow boxes, and fill them with a compost consisting of two parts turfy loam, one part horse dung, and one part comprising equal proportions of leaf-mould, road grit and old mortar rubbish; the materials should be mixed thoroughly and broken up finely before being placed in the boxes.

The seeds should be sown very thinly, lightly covered with fine soil, and placed in a house having a temperature of 55° and 65°. When the seedlings appear they should be stood near the roof-glass and kept almost dry. So soon as they can be handled they should be transplanted three inches apart each way, in boxes containing a similar compost to that used for the seeds. Grow them near to the roof-glass, syringe them daily, and shade them slightly from bright sunshine.

At the latter end of March remove them to a cold frame, gradually harden them off, and plant them in prepared beds about the middle of April; a trowel should be used for the operation, and if care is exercised the seedlings may be lifted with a good ball of earth attached, and planted one foot apart in rows fifteen inches asunder.

In dry weather the plants should be given plenty of water, and it is beneficial to syringe them daily. Directly the bulbs begin to swell they should be top-dressed to a depth of two inches with well-decayed manure that has been passed through a sieve with a one-inch mesh; it is also very helpful to apply a good dusting of soot or artificial manure weekly.

Onions grown under these conditions, besides being extra fine, will be quite immune to attacks of the Onion fly.

Ailsa Craig is a splendid, large, globular-shaped Onion suitably adapted for this mode of culture, single bulbs often attaining the weight of three pounds. Cranston's Excelsior is also a very popular exhibition variety. *W. Miller.*

HOME CORRESPONDENCE.

The Toad.—The praises of the toad do not seem to have been sung to any extent, but I know from experience that the creature is worthy of a little praise. Here we have a long Peach house, in which, for a number of years, I have had all kinds of trials and tribulations in the growing of Peaches, from an obscure disease—Cladosporium carpophilum—caused by the journeyman spraying too late in the morning in a closed house—to earwigs, wood-lice, and ants. The spot disease was easily cured, but we tried all kinds of cures for the insect pests. The only traps we found really useful were lengths of Bean-stalks, but that entailed too much labour. At last *The Gardeners' Chronicle* advised toads. I hastened to the schoolmaster and said, "Toads at twopence a head." For the next two weeks I was swamped with toads, some without a fore-leg, others minus a hind-leg, some eye-less—the children, alas, seemed to think that any remains of a toad would be worth twopence. I never knew there were so many damaged toads about. But they did their work nobly, and we had no more flies on the Peaches, indeed, nothing that crawled had a chance, so the Peaches were flawless in that respect. I do not know if it is usual but toads seem to keep to certain well-defined boundaries—one, two, or three in certain places, and always the same ones. They do not seem to poach on each others preserves. *J. D. C.*

Big Bud on the Hazel.—Your correspondent, Mr. Harper (p. 393), may be interested to know that I gathered to-day (Monday) the specimens I send herewith of big buds from Hazel bushes. The bushes are growing in a hedgerow in Kent. In appearance the swollen buds exactly resemble those of the affected buds on Black Currants, but apparently the mite which caused big bud in this case is distinct from that which causes the swollen buds on the Currant, for it is known as Eriophyes avellanae, the Currant gall mite being named Eriophyes ribis. According to Prof. Theobald in *Insect Pests of Fruits*, galls are also formed by many of these mites on the leaves of various plants. *D. McDonald.*

Herbaceous Paeonies.—Your correspondent *K. R.*, in his very interesting article on "Herbaceous Paeonies," mentions six inexpensive varieties likely to meet the tastes of most growers. I should like to add a few more, also inexpensive ones, which seem to take people's fancy, namely, Felix Crousse, red; Madame de Verneville, white, very good; Mons. Jules Elie, silvery-rose, a large flower; and Marie Lemoine, white and late. It is surprising that these are not more largely grown for cut flower purposes in private gardens. Given a good start the Paeony will last for several years, requiring very little attention, except an annual mulch of short dung. *George Kent, Walton-on-Thames.*

SOCIETIES.

ROYAL HORTICULTURAL.

December 16.—This, the last meeting of the year, was held at Vincent Square, Westminster, on the above date, and although the weather was unpleasant, there was, nevertheless, a fair attendance of visitors. Greenhouse-flowering plants were the principal items shown, and a Gold Medal was awarded to Baron Bruno Schröder for a noteworthy group of Begonias. The Hon. Vicary Gibbs sent a collection of Hollies, which attracted considerable attention.

Orchid Committee.

Present : C. J. Lucas, Esq. (in the chair), Messrs. Gurney Wilson (Secretary), Sir Fred. W. Moore, Jas. O'Brien, Fred. K. Sander, H. T. Pitt, J. E. Shill, W. H. Hatcher, H. G. Alexander, A. McBean, John C. Cowan, T. Armstrong, W. J. Kaye, Henry H. Smith, Frederick J. Hanbury, J. Wilson Potter, Arthur Dye, and Chas. H. Curtis.

FIRST-CLASS CERTIFICATE.

Cypripedium Perseus (*Alcibiades* × *Lady Dillon*), from Lt.-Col. Sir Geo. Holford, Westonbirt, Tetbury (gr. Mr. H. G. Alexander). A model flower, and, as shown, one of the finest and most interesting of recent exhibits, in that it is the original plant for which the late W. R. Lee obtained an Award of Merit at the Royal Horticultural Society's meeting on January 14, 1919, but now developed into its full beauty in Mr. Alexander's hands. The plant bore two flowers, perfect in shape and broad in all their parts. The dorsal petal is over three inches across, the margin pure white, and the centre covered with heavily-spotted lines, which form a band in the middle and get smaller towards the margin. The broad petals and lip are claret brown, with a distinct, yellow margin.

A Bronze Lindley Medal was awarded to Odontoglossum ardentissimum Pintadeau (Pescatorei × crispum), from J. J. Bolton, Esq., Claygate Lodge, Glaygate (gr. Mr. S. Lyne). It was a remarkably fine specimen and probably the most highly developed of any of the same cross. The ample inflorescence consisted of one spike with fourteen branches, bearing together eighty-three perfectly-formed flowers. The cross was evidently with a finely blotched O. crispum, for the flowers were ruby-red with broad white margins and white tips.

GROUPS.

Messrs. Sanders, St. Albans, were awarded a Silver Banksian Medal for a very effective group composed principally of Cymbidiums, among which were noted their graceful novelty, C. Fairy (erythrostylum × Gottianum), a hybrid partaking much of the elegant C. erythrostylum parent; the flowers are blush-white, with faint, Rose lines on the petals and a ruby-red front to the lip with some ruby spotting at the side lobes; Cymbidium Doris var. Khaki, a pretty form, with cinnamon tints prevailing; and C. Schlegelii albens, a distinct flower of wax-like substance and blush-white tint. The Cypripediums included the dark-coloured C. Thunderer, C. Antinous, C. Rheims, and the Odontoglossums, the exceptionally distinct O. Wilckeanum albens, with claret-red markings and the best in colour of its class.

At the exhibition held on December 2, A. J. Hollington, Esq., Forty Hill, Enfield, was awarded a Silver Banksian Medal for his interesting and well-arranged group, composed entirely of Cypripediums, and not a Bronze Banksian Medal, as recorded in our report on p. 395. Mr. Hollington is one of the oldest and best-known Orchidists in the neighbourhood of London, and has always grown Cypripediums well.

Floral Committee.

Section A.—*Present :* Mr. H. B. May (in the chair), and Messrs. J. F. McLeod, Arthur Turner, H. J. Jones, D. Allan, J. M. Bridgeford, W. Howe, W. H. Page, D. B. Crane, W. P. Thomson, W. B. Gingell, J. B. Riding, E. R. Janes and W. D. Cartwright (Secretary).

Section B.—*Present :* Mr. Gerald W. Loder (in the chair), and Messrs. Jas. Hudson, G. Reuthe, W. J. Bean, C. T. Musgrave, F. G. Preston, G. Yeld, C. Williams, Reginald Cory, R. C. Notcutt, and T. Hay.

AWARDS OF MERIT.

Rose Columbia.—Although this variety has been in cultivation four or five years, it has never before received any recognition from this society. It is of American origin, and was figured and described in our issue of September 13, p. 177. The blooms exhibited had been cultivated on the American system, and stems from four to five feet had been produced by pinching out the side buds. The flowers were of good size and colour and delightfully fragrant. Shown by Mr. C. Engelmann, Saffron Walden.

Chrysanthemum Balcombe Beauty.—A good decorative variety of rich golden colour. It is a sport from December Bronze. Shown by Mr. A. J. Vinden, Balcombe, Sussex.

Crataegus Carrierei.—This hybrid Crataegus was described recently in *The Gardeners' Chronicle*, December 6, p. 391. It is a particularly desirable tree on account of the late ripening of its fruits, which are retained on the leafless branches throughout the winter. Shown by the Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree.

Colchicum libanoticum.—This species is figured in the *Bot. Mag.*, t. 8015. It is found in a wild state on Mount Lebanon, and there are pink and white forms. The specimens exhibited had been grown in a cool house, and the white flowers were produced in clusters of from six to nine. The perianth segments were marked with canary-yellow at their bases; the anthers are yellow, and the white perianth tubes are from three to four inches long. It is similar to C. montanum. Shown by E. M. Preston, Esq. (gr. Mr. C. T. Wood), The Warren, Hayes, Kent.

GROUPS.

Mr. J. W. Forsyth filled a long table length with Chrysanthemums with a foreground of Cyclamen in named varieties. Among the Chrysanthemums were large epergnes filled with the yellow incurved variety Embleme Poitevene, and masses of Mary Morris, Cheshunt White, Madame Oberthur, and Wm. Turner were included in the display (Silver Banksian Medal).

One of the features of the show was a splendid exhibit of Begonias of the Gloire de Lorraine type from Baron Bruno Schröder (gr. Mr. E. J. Henderson), The Dell Park, Englefield Green, Surrey. The specimens were magnificent examples of cultural skill, and the plants grown for the most part in four-and-a-half-inch pans; all were remarkable for their large size and profuse flowering. Mrs. Lionel de Rothschild, deeper in colour than the type; Turnford Hall, and the American variety Mrs. J. Peterson were included in the display, which was the most imposing in the hall. (Gold Medal).

Well-grown Cyclamens in many shades of colour were contributed by Mr. Arthur Shambrook. The varieties included Mrs. Buckston, of beautiful salmon-cerise colour, with frilled petals, and Lady Markham, a fine flower of rose-pink colour and purple eye (Silver Banksian Medal).

Messrs. Stuart Low and Co., had a large group of Carnations, including the deep crimson variety Sir Phillip Sassoon, and the same firm also staged winter-flowering Begonias, Cyclamens and other greenhouse plants in quantity (Silver Banksian Medal). Mr. C. Englemann showed the new Janet, a bright carmine-cerise flower, in his group of Carnations (Bronze Banksian Medal); and Messrs. Allwood Bros. also staged perpetual-flowering and perpetual border Carnations as well as varieties of Dianthus Allwoodii (Bronze Banksian Medal).

The Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Aldenham, provided a seasonable group of some thirty or so bowls filled with distinct Hollies. Among berried branches were Ilex Aquifolium Blood Orange, with fruits of distinct colour, and I. serrata, with neat foliage and bright scarlet berries, while other interesting species and forms were the Silver Hedgehog Holly (I. A. ferox argentea), I. cornuta, I. Pernyi and its variety Veitchii, I. opaca, I. spinosissima, and the small-leaved I. crenata (Silver-Gilt Banksian Medal).

Messrs. Bakers showed Primula Wanda and berried and evergreen shrubs (Bronze Banksian Medal). Mr. F. G. Wood showed a selection of miniature rock gardens suitable for table decorations, and Miss Gladys House was also responsible for a group of small, dainty gardens filled with growing plants (Bronze Banksian Medal).

Conifers and hardy shrubs were displayed by the Orpington Nursery Company (Silver Banksian Medal), and the Misses K. and E. Hopkins had a small exhibit of hardy plants. Miss E. Heathcote showed Violet Princess of Wales in magnificent form (Bronze Banksian Medal), and Mr. Baldwin Pinney also contributed a small group of Violets.

Fruit and Vegetable Committee.

Present : Messrs. C. G. A. Nix (chairman), J. Cheal, Geo. F. Tinley, S. B. Dicks, A. C. Smith, F. Jordan, J. Wilson, H. Prince, G. Kelf, E. Beckett, W. H. Divers, A. N. Rawes, and E. A. Bunyard.

Mr. Hal Jones, Letchworth, again exhibited Apple Smiling Morn, a seedling from Wealthy. The fruit is of very attractive appearance with a high colour, and the flavour is very good, but it showed no advance on some of the best late varieties already in existence.

E. Whitley Strong, Esq., Upper Weston, Ross-on-Wye, showed some very large Brussels Sprouts, most probably of the variety President Carnot. They were big, solid Sprouts, but somewhat coarse and of a type not generally in favour with growers.

Mr. A. Metcalfe, Luton Hoo, sent from a garden in Stamford, Lincolnshire, a box of very fine Persimmons grown in the open. The fruits were perfectly ripe and large specimens of their kind. Persimmons from out-of-doors are not general in this country, especially such fine specimens as these. A Cultural Commendation was recommended.

Messrs. Bunyard and Co. exhibited twenty-four varieties of Pears, for which a Silver-Gilt Hogg medal was recommended. The collection was very interesting, as showing some of the best sorts available at this season, and they included Doyenné Georges Boucher, Glou Morceau, Duchess de Bordeaux, Chaumontel, Bergamotte Esperen, Blickling, Josephine de Malines, Mme. Dupuis, Winter Tan, Beurré Vauban, Double de Guerre, Gilogil, Vicar of Winkfield, Marie Benoist, Passe Crassane, Beurré de Naghin, Beurré Baltet Pére, Admiral Gervais, Uvedale's St. Germain, Catillac, Easter Beurré, Verulam, Comte de Paris, and Bellissime d'Hiver.

DUMFRIES AND DISTRICT HORTICULTURAL.

The annual meeting of the above Society was held in the Wesley Hall, Dumfries, on the evening of November 29, Mr. W. A. M'Alister, President, in the Chair. The report of the secretary and treasurer, Miss Young, was submitted. It showed a loss on the year's working of fully £25, caused mainly by an increase in the number of classes and prize money. The reserve fund now stands at upwards of £60. The report was considered fairly satisfactory, and the

Chairman, in dealing with it, discussed such questions as securing greater public support and the feasibility of having a two days' show or of holding the show on some other day than a Saturday, which was unsuitable for the business people of Dumfries. Mr. M'Alister also made reference to the able manner in which Miss Young had performed the duties of secretary and treasurer. The report was approved of and Miss Young thanked for her services. The following were appointed office bearers:—President, Mr. A. W. M'Alister; secretary and treasurer, Miss Young; vice-presidents, Mr. J. D. Dixon, Mr. J. M'Monies, and Mr. W. King.

It was remitted to the directors to consider the whole question of the date of the show, etc., which it was suggested might be held early in August.

READING AND DISTRICT GARDENERS'

At a recent fortnightly meeting, held in the Abbey Hall, there was a record attendance of members and friends to hear a lecture on "The bottling of fruit and vegetables," by Mr. G. B. Bassett (Messrs. Fowler, Lee and Co, Ltd.), Queen's Road, Reading.

The lecturer fully explained the system of sterilisation, which, he said, was a very simple one, and gave practical details of the correct handling of the steriliser. He also gave advice on the selection of bottles, with their appliances, and dealt with the causes of faulty bottling. It was advised that all spare ripe fruit should be bottled without water and sterilised so that jam could be made at various times of the year.

The competition for Brussels Sprouts attracted ten competitors, and some extra fine specimens were shown. The first prize was gained by Mr. J. Wynn, The Gardens, Hammonds, Checkenden; Mr. H. Wade, The Gardens, Abbotsfield, Goring Heath, was second; and Mr. H. Wynn, The Gardens, Queen's House, Goring Heath, was third.

In the non-competitive section, Mr. E. Blackwell, The Gardens, Foxhill, Reading, received a First-class Certificate of Cultural Merit for six fine, massive blooms of Mrs. Pulling Chrysanthemum, whilst Mr. C. Tovey, The Gardens, Leighton Park, received an award of merit for three vases of Chrysanthemums. The judges called special attention to a seedling Chrysanthemum shown by Mr. C. J. Howlett, The Mews, Earley.

——At the meeting held on Monday the 8th inst., a large and appreciative audience assembled under the chairmanship of Mr. M. Goddard to hear a lecture on "Delphiniums and other good Hardy Plants," by Mr. Thomas Carlisle, the Loddon Nurseries, Twyford. Mr. Carlisle dealt specially with Delphiniums, Phloxes, Lupins, and Michaelmas Daisies, giving the names of the most suitable varieties for gardens and their characteristics, together with short details of their propagation and cultivation. He also briefly touched upon such plants as Salvias, Heleniums, Rudbeckias, Anchusas, Anemones, Coreopsis, and Gaillardias.

The competition for three dishes of Potatos, three distinct kinds, resulted in some very fine tubers being staged: those in the first prize exhibit, staged by Mr. A. H. Fulker, Elmhurst Gardens, Reading, were especialy good. The second prize was won by Mr. F. Alexander, Kennets Lodge Gardens, Theale, and the third by Mr. J. Wynn, Hammond's Gardens, Checkendon.

In the non-competitive section a First-Class Certificate of Cultural Skill was awarded to Mr. J. Wynn, for a grand batch of Cyclamens grown from seed sown in August, 1923. The plants were profusely flowered, and consisted of Sutton's Salmon Pink, Salmon Scarlet, Giant White, and Crimson and White. The judges directed special attention to three dishes of Potatos grown on an allotment by Mr. E. Iles, Brighton Road, Reading.

GLASGOW AND WEST OF SCOTLAND.

The last monthly meeting of the present year was held on Wednesday, December 4, Mr. Joseph Dobson presiding. The evening was set aside to questions, and the subjects discussed were numerous and varied, and included "The Effect of Lime on Potatos"; "The Cultivation of Disbudded Chrysanthemums"; "Cultivation of Violets"; "The cause of Pansy Disease and its Cure"; and the Bud-dropping of Sweet Peas." In the course of the discussion on Chrysanthemums, Mr. Smellie mentioned that the white variety Caledonia had been produced by crossing a common white Marguerite with a Chrysanthemum. This statement was not accepted by Mr. McAlpine, who was of opinion that Caledonia was not obtained by such a cross. He maintained that it could not have been a cross with the Marguerite, otherwise the result would have been a hybrid. In reply to a question, Mr. Smellie explained that the Chrysanthemum was the maternal plant of Caledonia. The meeting decided in favour of a revival of the annual social gathering.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

December 5.—*Committee present:* The Rev. J. Crombleholme (in the chair), Messrs. A. Burns, A. Coningsby, D. A. Cowan, J. Cypher, A. G. Ellwood, J. Evans, W. G. Giles, Capt. W. Horridge, D. Losh Thorpe, E. Tack, J. Thrower, E. W. Thompson and H. Arthur (Secretary).

First-Class Certificates.

Cypripedium Cappamagna var. Samuel Gratrix—A variety with an exceptionally large and very broad dorsal sepal, the white ground lined and flushed with reddish-purple with a deep crimson line in the centre; the pouch is reddish-purple. From S. Gratrix, Esq.

Cypripedium Llewellyn Hanmer (*Christopher* × *Goliath*).—A large, well-shaped flower; the dorsal sepal is white with a green base and brown and purple spots. From Messrs. Keeling and Sons.

Awards of Merit.

Cypripedium Cavalier (*Earl Tankerville* × *Hera*); *C. Lord Allenby* (*Gaston Bultel* × *Baron Harefield*); and *Odontioda Eastern Monarch.* From Mrs. Gratrix.

Cypripedium Damascus (*Earl Tankerville* × *Dreadnought*). From Messrs. Keeling and Sons.

Groups.

A. Hanmer, Esq., Buxton (gr. Mr. G. Giles), staged a group for which a Silver-gilt Medal was awarded.

A Silver-gilt Medal was awarded to Messrs. J. Cypher and Sons, Cheltenham, for a group in variety.

Silver medals were awarded to the following exhibitors: S. Gratrix, Esq., West Point; J. Evans, Esq. Colwyn Bay; Messrs. Stuart Low and Co., Bush Hill Park; and Messrs. Cowan and Co., Southgate.

THE ORCHID CLUB.

The meeting of the Orchid Club, held on the 12th inst., was the occasion of a considerable and interesting display of plants.

At 3 o'clock, Professor F. E. Weiss, F.R.S., gave a short address on "Pollination." After describing the various adaptations for self-pollination, he referred at length to the investigations which had been carried out to explain the phenomenon of apparent sterility, and suggested that collaboration between the University Botanical Department and the members of the Club should be encouraged to elucidate further this interesting problem.

Diploma of Merit.

Odontoglossum Lady Thom. (*O. amabile Sandhagense* × *O. St. James*).—Shown by Sir William Thom. The small plant carried a spike of six flowers, each three inches wide, in shape like that of a good O. crispum. The sepals and petals are solid violet colour with white tips; the lip is large and flat and of similar colour. It will probably be much finer when the seedling reaches maturity.

Groups.

B. J. Beckton, Esq. (gr. Mr. W. A. Stewart), showed a large and effective group composed of Cypripediums, including Cypripedium Warrior Green's var., and various Calanthes.

A. T. Cussons, Esq. (gr. Mr. F. Cookson) exhibited an imposing collection of Cymbidiums and Cypripediums, amongst which was a fine var. of Cymbidium Tracyanum.

Sir William Thom (gr. Mr. R. Williams) staged a group of select Cypripediums, including Cypripedium Grand Duke Nicholas, C. Maudiae Athol House var., C. Hermes, and C. Nirvana.

Mrs. Fred Hardy had an elegant group of Odontoglossums, together with a selection of Cypripediums shown by Dr. Craven Moore (gr. Mr. C. Branch). Conspicuous in the latter were a number of finely-developed flowers of C. Alcibiades, C. Vashti, and the brilliant crimson C. Prince Albert var. Chardwar.

George Taylor, Esq., exhibited a collection of Cypripediums, including C. Perseus with two very fine flowers.

Two new members were elected.

Obituary.

D. R. Dixon.—Following an illness due to heart trouble, Mr. D. R. Dixon, late of Hagley Hall Gardens, near Stourbridge, died on Wednesday, December 10. He was seventy-one years of age, and leaves a widow and aged mother to mourn his loss. Mr. Dixon was well known in Worcestershire as a skilled horticulturist, a good botanist, and an enthusiastic bee-keeper. For thirty years he was gardener to Lord Cobham at Hagley Hall, and retired from that position about eighteen months ago, after the death of his employer. As church warden, chorister, and member of the local Parish Council, Mr. Dixon rendered excellent service for many years, and his loss will be felt keenly by many who were intimately associated with him in his public duties, as well as by his many personal friends.

ANSWERS TO CORRESPONDENTS.

Names of Fruits: *J. S. C.* Not recognised: probably a local variety. *H. C. M.* 1, Beurré Superfin; 2, Beurré Alexander Lucas; 3, Glou Morceau; 4, Bergamotte Esperen; 5, probably Comte de Lamy; 6, Marie Louise. *T. W. P.* 1, Beurré Diel; 2, Vicar of Wakefield. *C. R. F. T.* 1, Duchesse de Bordeaux; 2, Beurré Clairgeau; 3, Winter Quoining. *H. A.* 1, Thompson's; 2, Zéphérin Grégoire; 3, Madame Treyve. *C. J. G.* 1, Court of Wick; 2, Golden Harvey; 3, King of Tompkin's County; 4, Peasgood's Nonesuch; 5, Scarlet Pearmain; 6, Cornish Gilliflower; 7, Northern Spy; 8, Flower of Kent 9, Reinette Franche.

Single Chrysanthemums: *F. G.* We regard the following twelve varieties as good single Chrysanthemums of the type you mention:—Mrs. W. Smith (white); Bronze Molly (Apricot-orange), Molly Godfrey (pink), Audrey (bronze-yellow), Mr. A Robertson (pink), Esme Walters (Buttercup-yellow), Isobel Felton (golden-yellow), Hilda Shoebridge (silvery-pink), Reginald Godfrey (Chestnut-red), Mrs. R. Harris (golden-yellow), Pink Beauty (Rose-pink), and Miss Joyce Moore (crimson).

Trailing Raspberry: *D. S. F.* We should like to see a specimen of this Raspberry when in fruit.

Communications Received.—A. G.—J. T. B.—G. L.—R. E. A.—Old Reader.—E. N.—L. C. W.

THE
Gardeners' Chronicle

No. 1983—*SATURDAY, DECEMBER* 27, 1924

CONTENTS.

Allotments 432
Alpine garden—
  Hypericum nummularium 435
  Primula secundiflora and P. vittata ... 435
Annuals for greenhouse and conservatory decoration 433
Banana in Uganda, the, 438
Books, notices of—
  Handbook of the British Flora ... 437
Brazil Nuts 431
Cat, the bothy 431
Christmas pudding, herbs in the 431
Cultural memoranda—
  Winter pruning ... 438
Currant and Gooseberry industry, the American 431
Fog, the effects of, at Kew 432
Fruit register—
  Apple Golden Harvey 439
  Bullace Langley Black 439
Garden craft in the Canticles 436
"Gardeners' Chronicle" seventy-five years ago 432
Gardeners' status, the 439
Garden, the "old-world" 435
Hardy flower border—
  Double Potentillas ... 435
Holland International Spring Flower Show 432
Kew: effects of fog at, 432; students' days at 432
Lily of the field, the ... 439
Mistleto 435
Nigella damascena and N. hispanica 433
Onions, imports of ... 432
Orchid notes and gleanings—
  The first Odontoglossum crispum ... 433
Royal Horticultural Hall, lighting of the ... 431
Societies—
  British Florists' ... 440
  National Chrysanthemum 440
  Reading and District Gardeners' 439
  Royal Caledonian ... 439
  United Horticultural Benefit and Provident 439
Beet Sugar Factory at Ipswich 432
Trees and shrubs—
  Salix babylonica ... 437
  S. Balfouri 437
Week's work, the ... 434

ILLUSTRATIONS.

Bananas in flower and fruit in Uganda 438
Blunt, Mr. H., portrait of 432
Mistleto, a cluster of 435
Odontoglossum crispum: Blunt's plant, reproduced from the original painting 433
Weeping Willow over-hanging the Lily pond at Kew 437

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 38·4.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Tuesday, December 23, 10 a.m.: Bar. 30·3 temp. 42°. Weather, dry, no sun.

Brazil Nuts. AN interesting account of the Brazil Nut industry of the region of the Amazon Valley is given in a *Bulletin* published by the United States Bureau of Foreign and Domestic Commerce and reviewed in the *Journal* of the Royal Society of Arts*, from which the following particulars are gleaned. Brazil nuts are the fruit of a tree found almost exclusively in Brazil, known as Bertholletia excelsa. This is one of the oldest trees of the South American jungles, and attains a height of some one hundred and fifty feet with a diameter of about six feet at the base of the trunk. The tree makes a characteristic growth, with a long, strong trunk furnished with branches only on its upper portion. It is stated that the production of Brazil Nuts in the State of Amazonia has increased very largely in recent years, and now slightly exceeds that of the State of Para, the former principal exporting country. The following figures show that there has been a great increase in the export of these nuts, for whereas in 1914 the total amount equalled 329,934 hectolitres, each hectolitre equalling one cwt, the amount in 1922 was more than double, *i.e.*, 682,524 hectolitres, or, roughly 34,000 tons. As most of our readers are aware the nuts are enclosed in a very hard, outer case some half-inch in thickness, and the number of Brazils in each fruit is from twelve to twenty-two. A single tree will produce from five hundred to one thousand pounds of nuts, not including the weight of the large, outer shell. Harvesting begins generally in November and lasts until June, the greater part of the crop falling from January to March. In certain districts, however, the nuts begin to fall in November, and those from these regions are ready for market over a month in advance of those from other parts. This is stated to be an important advantage, as such nuts are available for the Christmas season, when they are most in demand and realise the highest prices. When the fruits drop they bury themselves in the soft soil, and searching for the fruits is accompanied by some risks, as gatherers have been, at times, fatally injured by the fruits falling on them from these high trees. In order to mitigate this danger a kind of hut made of thatched Palm, with a steep slope to the roof, is set in the middle of the forest area where the nuts are to be gathered. Opportunity is taken of the time when there is little or no wind to set out to gather the nuts already fallen. The work is done as quickly as possible, and the fruits are gathered in baskets and carried to the hut. When the wind is strong the gatherers remain in the hut, opening the outer shells by means of machetes and extracting the nuts. The latter are washed thoroughly to give them a clean appearance, conveyed to a neighbouring stream and transported by water to the nearest shipping centre. The proprietors of the interior sell the nuts to commission merchants who, in their turn, market them to the exporters. The market price is fixed by auction in Para and Manaos. The large, outer shell furnishes a kind of oakum used for caulking ships, while from the "Brazils" themselves oil is extracted, and this oil was only a few years ago extensively used in the Amazon Valley for illuminating purposes. The oil also contains medicinal properties, so that it has a pharmaceutical value. As to the timber of the tree, it is valuable for naval construction, but very little timber is produced, as the owners are disinclined to destroy trees which are such a valuable source of profit. Little effort has been made to cultivate Bertholletia excelsa, and although for the present the demand is fast outstripping the production, there are large areas yet to be exploited. The best customer is the United States, but large quantities of nuts are sent to Europe, by far the larger portion being consigned to this country.

"Gardeners' Chronicle" Almanack for 1925—We shall publish in our issue of January 10 a *Gardeners' Chronicle* Almanack for the year 1925. In order to make it as useful as possible for reference we shall be obliged if Secretaries of Horticultural, Botanical, and Allied Societies, or any of our correspondents WILL SEND US IMMEDIATE INFORMATION OF ALL FIXTURES FOR THE ENSUING YEAR.

Lighting of the R.H.S. Hall.—Numerous complaints have reached us with regard to the poor lighting of the Royal Horticultural Hall, Vincent Square, Westminster, on the occasion of the meetings held late in November and during December. No doubt there are difficulties in connection with the provision of efficient artificial illumination on foggy days, but these cannot be considered insurmountable by a wealthy Society. One correspondent writes: "in these days of scientific illumination there is really no excuse for the poverty-stricken methods in use at Vincent Square, and so long as we are liable to such darkness as we had on December 2, some provision ought to be made for it." There is justification for the complaint. and further, at a Committee meeting held at Vincent Square one evening during the present month—not on a foggy day—only one, and that an inefficient light, was available.

Herbs in the Christmas Pudding.—A correspondent in the *Pharmaceutical Journal and Pharmacist* gives an interesting recipe of a Christmas pudding dating early in the seventeenth century. Its constituents were as follow: "take a Calfe Trindle, a quart of Creame, halfe a dozin egges. a Manshett, a pound of Currans, with Cinamon, Ginger, Nuttmegge, mace and Cloves, and Suger, and a little Rose water, a quantity of ysopp meziorum, pennyriall, Winter Sauory, Camomile; shed all these small with some mutton suett amongest them, putt them into the Bagg, and soe boile it." As the correspondent rightly observes, some of the ingredients in such a pudding would not recommend themselves to present-day tastes.

The Bothy Cat.—The bothy cat is a very important member of the garden commonwealth and is usually regarded as of greater importance than the other cats about the place. Amongst the several bothy cats we have known one of the most interesting was a tortoise-shell. As most gardeners are aware, the tortoise-shell cat is almost invariably a female, and they may be interested to know that this is correct according to Mendel's law, which has such a bearing on the breeding of their plants. Mr. F. Hays points out in the *Journal of Heredity* that the genetics of tortoise-shell cats present the following points: Black males mated to yellow females give tortoise-shell females and yellow males. Yellow males mated to black females give tortoise-shell females and black males, although an occasional black female has been known to arise. Black males mated with tortoise-shell females give both tortoise-shell and black females and yellow and black males. Yellow males mated to tortoise-shell females give both tortoise-shell and yellow females and both yellow and black males. Tortoise-shell males have been known to arise as a sort of rare freak, but they are uniformly found to be sterile.

The American Currant and Gooseberry Industry.—In a leading article contributed to these columns (p. 383) reference was made to White Pine Blister rust and its relation to the Currant and Gooseberry crop in America. Judging from a recent publication* this disease is giving cause for great alarm by reason of the fact that the White Pine—a great national asset, essential to forestry development—is being severely affected and the forests threatened with destruction. The disease is caused by a fungus which must first pass a stage of its existence on the leaves of the Currant or Gooseberry before it can attack and kill the Pines. Of bush fruits the English Black Currant is susceptible to the disease, and is regarded as being the most active agent concerned in the long-distance spread and establishment of the malady. The United States Department recognises the cultivated Black Currant as a distinct menace to the White Pine timber supply, so much so that it is opposed to the growing of this fruit anywhere in the United States, and recommends all concerned to accomplish its complete elimination from the Pacific, Rocky Mountain, Atlantic, Appalachian, Ohio Valley, Upper Mississippi Valley, and Lake States. Furthermore, it is advised that the growing of Black Currants even in home gardens should be abandoned. The standing White Pine in the United States is valued at about £25,000,000, while the value of Black Currant plantations is insignificant by comparison.

---

* October 24, 1924.

* Currants and Gooseberries: their culture and relation to the White Pine Blister Rust. *Farmers' Bulletin*, 1398. U.S.A. Dept. of Agriculture, Washington, D.C.

Effects of Fog at Kew.—Of the many trials and difficulties cultivators of greenhouse plants have to contend with, there is perhaps none which is more trying and devastating in its effects than a fog of the type such as was experienced recently in the London area. In the Conservatory at Kew—a structure which is always kept gay with flowers and is one of the show places of the gardens—the plants present a sorrowful picture, and while our sympathy goes out to those whose duty it is to tend the plants and present those floral displays which delight the public, the subject of the effect of fog on plant life presents interesting aspects, the unravelling of which would provide much study. Why it it that the fog plays such havoc with tender plants in such a comparatively short space of time; that leaves fall off in their prime of life; that flowers are shed, or that both have a burned appearance as if singed by fire? Begonias, of which there were many fine batches at Kew, have suffered very badly; Reinwardlia tetragyna and R. trigyna, a perfect mass of yellow flowers, lost more than three parts of their blooms in two days; Luculia gratissima and Sparmania africana disrobed themselves of leaves and flower buds and the Acacia flowers were reduced to dark brown masses of lifeless tissue. These are but a few of the many unfortunate examples that could be recorded, and we understand that in the other glass structures at Kew the effects on plant life have been quite as serious. It would prove a matter of great interest if this problem could be investigated by the plant histologist and physiologist alike; gardeners generally would be greatly indebted to such workers if, arising from such investigations, methods of cultivation during a foggy spell could be adjusted so as to overcome this suffocating effect which the plants seem to undergo.

Allotments.—The Executive Committee of the National Union of Allotment Holders waited on Lord Bledisloe, Parliamentary Secretary to the Ministry of Agriculture and Fisheries, on the 19th inst., in order to urge the importance of further legislation in connection with the provision of allotments. The deputation was introduced by Mr. H. Bainbridge, J.P., President of the Union, and the case was stated by its Secretary, Mr. J. Forbes, and various members of the Executive Committee. The point upon which emphasis was chiefly laid was the necessity of providing greater security of tenure for allotment holders by facilitating the purchase of land to be used permanently for allotments. Lord Bledisloe assured the deputation that the Ministry would give the matter sympathetic consideration.

Beet Sugar Factory at Ipswich.—One of the six new Beet sugar factories under the scheme of the late Government is to be built at Ipswich. The new factory, which will serve Sugar Beet growers in South Suffolk and Essex, will have a capacity of 1,200 tons of Beet per day. It will be ready by October 1, 1925, in time for next season's crop. The whole of the capital of the company has been subscribed.

Students' Days at Kew.—In 1915, when the Government thought it necessary to levy a charge for admittance to Kew Gardens, the horticultural world was indignant that money should be thus taken from the public, the general feeling being that the bulk of visitors went to Kew to gain that relief which nature affords in the form of flowers, trees, and verdant grass. In spite of public opinion, official austerity reigned for a period of years, and the charges were maintained until the beginning of 1924, when the five "penny" days were abandoned, and free admittance was once more allowed, but should the visitor happen to call on Tuesdays or Fridays he is still charged sixpence for admittance, as these two days are set aside for students, a system which was in force before the war, and still exists in the national galleries and other institutions and from which the Treasury doubtless took its lead. Yet, unlike the art galleries, where special facilities are given to the students who are allowed to make copies of masterly works, no special facilities exist at Kew, and we venture to think that the student could carry out his studies just as readily on an ordinary day as on a Student's Day, or even on a Bank Holiday. The income derived from student's days cannot be great and it would be a graceful act if the responsible authorities gave us free days all through the week as at Edinburgh and Glasnevin, where, during the war period and afterwards, no charges were enforced.

Holland International Spring Flower Show.—From time to time we have drawn the attention of our readers to the Holland International Spring Flower Show, which is to be held at Heemstede, Haarlem, from March 13 to May 21. A special folder has recently been issued to advertise the show, and this gives brief particulars of the special exhibitions which are to be held in conjunction with the great event. When fully opened out the publication measures 26 inches by 18 inches and contains reproductions of the bulb fields and other scenes, arranged around the sides, the centre being occupied by a bird's-eye view, in colour, of the exhibition grounds. Another illustration shows the position of the show ground in relation to the principal Dutch towns. As Heemstede is situated in the heart of the bulb-growing area, visitors to the show will have a splendid opportunity of inspecting the bulb fields, which throughout April and early May present magnificent stretches of colour. As it is anticipated that many Britishers will visit the great show or the subsidiary exhibitions, special trips to Holland are to be arranged by the railway companies. The folder may be obtained on application to the Secretary, Internationale Voorjaars Bloemen Tentoonstelling, Lange Begijnestraat 13, Haarlem, Holland.

MR. HENRY BLUNT

(See p. 433).

Imports of Onions.—The trade in imported Onions has developed enormously during the past forty years; in 1923 some five million packages were imported, representing more than two-hundred-and-fifty thousand tons of Onions, equal to an average consumption of five thousand tons weekly. The earliest supplies were derived from Portugal and Holland, and later from Spain and Egypt. The trade in Egyptian Onions, which dates about 1880, has reached very large proportions, although the first attempt to develop the Egyptian Onion trade here was a failure. At the present time our own country takes about half the total export of Egyptian Onions. It is interesting to know that the weather has a great influence on the sale of Onions. They are mostly in demand in cold, frosty weather, because of their heat-giving properties and probably also because they are regarded as excellent food to counter-act colds.

"Head Gardener" or "Superintendent"?—A correspondence is proceeding in *La Revue Horticole* regarding the status of the chief gardeners in the National Palaces, such as the Luxembourg and Versailles, who are, it appears, under the orders of the architects of the Palaces, and not completely autonomous. The *Revue* suggests that this is not satisfactory, and that the national head gardeners should be known as "Directors of Horticultural Services," with complete autonomy in their own departments.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Drying Plants so as to Preserve their Colours.*—No science, perhaps, requires so much practical knowledge as botany; in its study, botanical ramblings, and the preservation of gathered specimens are of the greatest assistance. The usual method, however, of drying plants is generally long and troublesome, and, above all, very uncertain. Indeed, whatever quantity of papers is employed to separate the plants, and even if the damp papers are replaced by dry ones every twelve hours, ten days are required before the plants are properly dried, and at the end of that time they are so discoloured, and their characters are so altered, that a great deal of practice is requisite to enable one to make them out. I have made several attempts to remedy these inconveniences, and I take the liberty of laying their result before the Academy. In a botanical excursion, I arrange my plants between sheets of grey paper, which immediately absorbs any free water arising from rain or dew. In this state the plants can be preserved for twenty-four hours without alteration. The next day I place them in very dry paper; then I put them in an apparatus of my own invention, in which they are completely dried in twenty-four or thirty hours, preserving the colour of their leaves and the brilliancy of their flowers. The following is the theory of my method: The water of composition and interposition evaporates but slowly in ordinary cases. It, however, struck me that by raising the temperature and diminishing the atmospheric pressure, I should probably arrive at a good result. I accordingly made a copper cylinder half-a-yard high and two feet in diameter. In this vessel I place a packet of papers containing one hundred specimens. I then put about eight pounds of lumps of unslaked lime in the spaces between the paper and the side of the cylinder and fix the top of the cylinder on. I then put the whole into a small tub and raise the temperature to about 125° or 130° by means of boiling water poured into the tub. The air is then exhausted from the copper cylinder by means of a small air-pump screwed into its lid. I make use of no anonometer, because, at this temperature, as the air is drawn out its place is filled by aqueous vapour, and, besides, in such an operation as this, no precision is requisite. The vacuum once made, that is to say, after having pumped at intervals for two or three hours, the apparatus is left to itself for twenty-four or thirty hours; at the end of this time, on opening the apparatus, the plants are found dry and like the specimens I have to lay before the Academy. *Gannal in "Comptes Rendus." Gard. Chron., December 29, 1849.*

ORCHID NOTES AND GLEANINGS.

THE FIRST ODONTOGLOSSUM CRISPUM.

As a matter of historic interest we reproduce in Fig. 339 an illustration showing what purports to be the first Odontoglossum crispum ever flowered in this country. This interesting picture, hitherto unpublished, is reproduced from a photograph of the original painting by C. B. Durham.

We are indebted for our illustration and the portrait of Mr. H. Blunt (p. 432) to Miss F. A. Bullen, of Bromley, Kent, daughter of the late Mr. Richard Bullen, to whom the painting was presented by Mr. Blunt. The following note accompanied the photographs:—

"In the early days of Orchid hunting the foremost nursery firms of those days sent collectors to the distant parts of the earth, and it was well understood that such enterprise involved considerable hardships and dangers. Indeed, several of these collectors never returned. Among the more successful of the collectors of Orchids was Mr. Henry Blunt. Although a matter of much controversy at the time, those immediately concerned had no doubt as to the facts, which were that Mr. Blunt made his great success whilst collecting for Messrs. Hugh Low and Co., in the neighbourhood of Bogota, Colombia, South America, and brought home the first living plants, the first to flower being exhibited in London under the name of Odontoglossum Bluntii. Subsequently this Orchid and also O. Alexandrae were referred to O. crispum, which, represented by its innumerable variations, remains one of the finest of Orchids for the cool house.

"After Mr. Blunt severed his connection with Messrs. Hugh Low and Co. he collected in Brazil for the late Mr. Richard Bullen, of Lewisham. Later, after a period spent at home, he returned to Brazil, became a Coffee planter, and married a Brazilian lady. It is believed he took the first Coffea liberica plants to Brazil, but did not succeed in persuading the Coffee planters to make a change, which, however, was brought about some few years afterwards."

A very interesting book might be written concerning Odontoglossum crispum and its many romantic, scientific and commercial interests. The species was discovered by Hartweg when collecting for the Horticultural Society of London about 1842, in woods between the villages of Fusagasuga and Pacho in the province of Bogota, his dried specimen supplying the material for Lindley's description as O. crispum in 1845. There was, therefore, no secret about its native habitat, or its correct name. Hartweg wished it to be named after Dr. Lindley, who, however, did not accept the honour. In his original description, in spite of the evidence of the flowers being white in Hartweg's specimen, an incorrect drawing made Dr. Lindley state that it was a yellow-flowered species.

Although often craved for by Orchidists, the bad character which these highland species of Orchids acquired when grown in unnaturally hot houses seemed to forbid the risk of an attempt to introduce living plants. But in 1863 a resolute effort was made, and Weir for the Horticultural Society, Schlim for M. Linden, and Blunt for Messrs. Low and Co. all started out to collect the coveted Odontoglossum, and all were successful in getting plants home, but the collection made by Mr. Henry Blunt for Messrs. Low and Co. seemed to be by far the most successful and at once took the lead.

The great dissimilarity in the flowers reported by the collectors obscured the identity of the species with O. crispum, even to the astute Reichenbach, who described a clear white form as O. Bluntii (*Bot. Zeit.* XXII, p. 415), while Bateman, in *Gard. Chron.*, 1864, p. 1083, described O. Alexandrae, a name which most Orchid growers regretted to relinquish for the more prosaic and not at all descriptive O. crispum. At the present day O. crispum is represented by hundreds of beautiful varieties and it may be grown in a cool house if given the necessary attention as to position, ventilation, and watering.

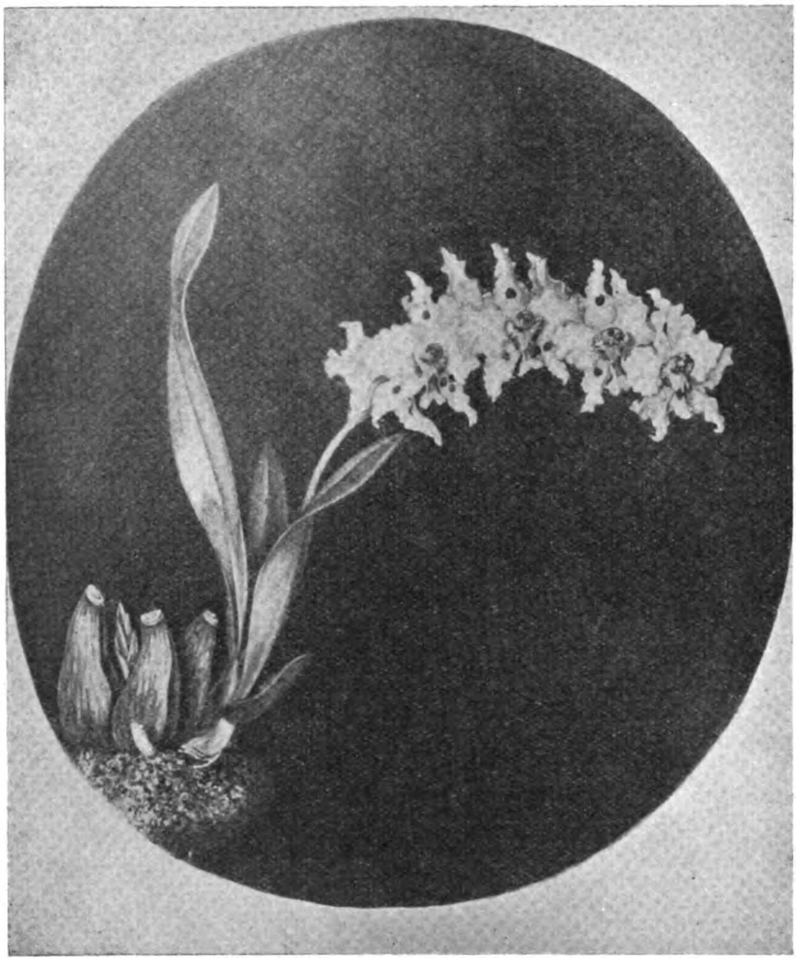


FIG. 339.—ODONTOGLOSSUM CRISPUM; BLUNT'S PLANT, REPRODUCED FROM THE ORIGINAL PAINTING BY C. B. DURHAM.

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

NIEREMBERGIA FRUTESCENS.

Although this plant is really perennial, it may be flowered during the first year from seed sowing, therefore it may be regarded as an annual for the present purpose. It is an erect, bushy-growing plant, with very tender shoots, attains a height of twelve to eighteen inches, and produces its large flowers in wonderful profusion over a long period. The blooms are pale lilac or bluish-white in colour. Altogether this Nierembergia is a charming and graceful plant for greenhouse decoration. Among a batch of seedlings, a plant with pure white flowers may appear occasionally, and if so desired, this may be propagated by means of cuttings.

Seeds should be sown during September, in a greenhouse temperature, the resulting plants flowering during the following summer; or seeds may be sown during January to obtain plants to flower during late summer and autumn of the same year.

When they are fit to handle easily, the young seedlings should be pricked off into pans or boxes, and subsequently potted off singly into thumb pots, or, if quick results are desired, three plants may be placed in one pot. Subsequent cultural details consist in potting plants as they require it, until they are in their flowering pots, those of five-inch size being suitable for this purpose. To promote a good bushy habit, the young plants should be pinched several times. They thrive quite well in any good potting compost, and as they are half-hardy, cool greenhouse treatment is desirable during all stages of growth.

Plants raised in autumn should be wintered in a sunny, airy greenhouse and carefully watered, as they are apt to suffer from damp during the winter months.

Other species worthy of cultivation are N. filicaulis, pale lilac with a yellow eye; N. calycina, and N. gracilis.

NIGELLA DAMASCENA AND N. HISPANICA.

These are very pretty and popular hardy annuals, generally known as Devil-in-the-Bush and Love-in-a-Mist. With their finely-cut, Fennel-like foliage and attractive flowers they are very elegant plants and useful for supplying cut flowers. The variety Miss Jekyll, with Cornflower-blue flowers is very popular.

For pot culture, seeds are best sown about the middle of September, in a cold frame. As seedlings transplant badly the seeds should be sown directly into the flowering pots, which may be of five-inch or six-inch size. When fit to handle the young seedlings should be thinned to five or six in a pot. They grow quite well in any good potting compost, and require very careful watering during the winter months; ventilation should be given freely on every favourable occasion, as any attempt at coddling the plants will soon ruin them. *J. Coutts.*

The Week's Work

THE ORCHID HOUSES.

By J. Collier, Gardener to Sir Jeremiah Colman, Bart., Gatton Park, Reigate.

Cattleya labiata.—This useful autumn-flowering Cattleya has passed out of bloom and may be top-dressed or re-potted. Great care must be taken not to damage the roots when removing them from the pots as some may be rather far advanced. C. labiata and many of its hybrids produce thick, fleshy sheaths, and when the flowers are removed the stems, together with the sheaths, should be cut near to the crown of the pseudo-bulbs. A watch must be kept for any accumulation of damp at the base of the leaf, which if not quickly removed is apt to cause a disease of the pseudo-bulb. If this trouble should be detected, a little powdered charcoal should be sprinkled on the affected parts.

Peristeria elata.—This Orchid succeeds best in a stove temperature during its season of growth, but now that the large pseudo-bulbs are fully developed, the plant should be given a cooler and drier position. This species requires a long season of rest, without which, however strong the pseudo-bulbs may be, it will not produce flower spikes. The plant should be kept on the dry side all through its resting period.

THE FLOWER GARDEN.

By W. Auton, Gardener to Viscount Elveden, Pyrford Court, Woking, Surrey.

Spring Bedding.—Examine the beds after frost and make the soil firm around the plants. During open weather the surface soil may be pricked over if sufficiently dry.

Tulips.—Early planted Tulips may be peeping through the ground, if so they may be protected by having a little light soil or leaf-mould placed on them. When the beds are also planted with carpeting plants such as Arabis, Violas, etc., these usually afford sufficient protection.

Lawns.—After planting is finished or when it is not practicable to carry it out, it is often possible to find a little more labour for lawns, which need constant attention both as regards weeding and top-dressing. During periods of open weather take the opportunity to remove tap-rooted weeds, as under the moist conditions now prevailing they may be more easily extracted. Aëration of small lawns may be done by means of the turf-maul, that of large lawns by means of the mechanical cultivator, and the practice of mowing the surface before applying a top-dressing of good compost is an excellent one.

Hardy Ferns.—If weather conditions are favourable the transplanting of these interesting plants may still be done in the home garden, but if plants have to be imported it may be preferable to defer the work until the spring. In the latter case the site should be prepared by deep digging, and liberal supplies of decayed vegetable manure should be employed. It is not wise to remove the ripening fronds of established Ferns at this season, even if tidiness appears to demand it. They are an invaluable aid in protecting the young, unopened fronds later during periods of cold winds. Similarly, leaves which may have accumulated around the plants should be allowed to remain, and in the spring they may be forked into the surface soil or covered with compost, when they will serve as a top-dressing and provide a new rooting area for the plants.

PLANTS UNDER GLASS.

By F. J. Clark, Gardener to Lt.-Col. Sir George Holford, Westonbirt, Tetbury, Gloucestershire.

Coleus thyrsoideus.—An old favourite amongst blue, winter-flowering plants is Coleus thyrsoideus that is just coming into flower. It requires much the same treatment as Pycnostachys Dawei, though it does not need so much root room and should not be pinched late in the season.

Cineraria Blue Gem.—For a winter display of blue for the greenhouse or cool conservatory, Blue Gem Cineraria is a delightful subject. It belongs to the Intermediate (Stellata) Section. Plants coming into flower now will be benefited by applications of weak liquid manure. To ensure a true stock the plants may be easily propagated from cuttings made from suckers during the summer.

General Remarks.—To keep the plant houses bright and interesting and to provide a constant supply of flowers becomes increasingly difficult week by week at this time of the year, demanding the exercise of forethought in the forwarding of bulbs and other plants which are amenable to forcing. In establishments where Hippeastrums (Amaryllis) are grown, some of the most mature and not recently-potted bulbs may be introduced to gentle warmth, plunging their pots in a bed of fresh tree leaves or fibre, having a temperature only slightly warmer than that of the house containing the bed. The bulbs should have received a thorough watering before being plunged in the bed. The usefulness of the various subjects and the pleasure to be derived from the occupants of the plant houses, will be enhanced when efforts are made to keep all sweet and clean, by the regular removal of decaying foliage and flowers, the scrubbing of the pots and by keeping the roof-glass clear to ensure the maximum amount of light reaching the plants. A very careful use of the water pot, too, is essential. Care in stoking is no less imperative, and lower temperatures than usual should be the rule in the stove, greenhouse and other plant houses generally during the dullest part of the winter, when many of their occupants should be resting more or less.

HARDY FRUIT GARDEN.

By R. W. Thatcher, Gardener to Mark Firth, Esq., Carlton Park, Market Harborough, Leicestershire.

Black Currants.—These bushes may now be pruned if the weather remains open. Take out as much old wood as is thought necessary to keep the bushes open for the sun and air to enter. Retain young shoots arising from the base of the plant and allow them plenty of room to develop. The greatest enemy of the Black Currant is the mite, which infests the buds and causes them to swell to an abnormal size. All infected buds should be picked off by hand and the bushes sprayed with a mixture of lime and sulphur. Although this specific will not destroy all the mites it will do much towards keeping them in check. Old bushes which have become dirty and past their best condition should be grubbed up and fresh young bushes planted from the nursery. Black Currants grow very quickly, and there is no reason to retain those that are old and worn out. These small fruits do very well in a part of the garden that is less favourable to other fruits, such as a partially shaded spot. They enjoy plenty of leaf-mould at their roots, and this should be dug in before planting time, and the bushes mulched with the same material after planting. Boskoop Giant is one of the best varieties, whilst September Black is a valuable late sort; both have very large berries and long fruit trusses.

FRUITS UNDER GLASS.

By T. Pateman, Gardener to Sir Charles Nall-Cain, Brocket Hall, Hertfordshire.

Early Muscat Grapes.—Where Muscat Grapes are required early in June preparations for forcing should be made forthwith. I prefer pot-grown vines for this early crop, for, in my opinion, ripe, well-finished Muscats are more easily obtained by pot cultivation, and the Grapes are quite three weeks earlier than those from vines planted out in a border. This if easily accounted for, as the roots of those growing in receptacles are kept in much warmer surroundings by frequent renewals of warm, fermenting materials, and by applying warm water to their roots oftener than could be done to those planted out. If pot plants are to be grown, procure some Beech or Oak leaves forthwith and mix them with a small quantity of stable manure, turning the leaves and dung several times. It is not necessary to make the bed of leaves too large; use only sufficient to obtain a gentle, bottom heat, and the heap may be added to when it is found necessary to do so. The pots should be plunged about six inches below their rims to allow room for a top dressing of new soil when it is found that the young vines are growing freely. If the weather proves mild, very little or no fire heat will be necessary during the first week or ten days, but after this keep the night temperature at 50° with a rise of 5° to 10° by day in mild weather. Syringe the vines daily, for preference about noon, and damp the paths and borders occasionally on sunny days, but not later than 2 p.m.

THE KITCHEN GARDEN.

By Waltr Y Staward, Gardener to Mrs. A. Coates, Burrough Hill Gardens, Melton Mowbray, Leicestershire.

Rhubarb.—More Rhubarb roots may be lifted for forcing in a Mushroom house or under a stage in a warm house. If the forcing is to be done in the open bed, secure large boxes or barrels and plenty of rough material from the stable yard, mixed with leaves. The crowns should be covered with the boxes or barrels and the litter placed about them.

Celery.—It is often a difficult matter to keep Celery late in the season owing to the ground being very wet, and where the crop is growing corrugated sheeting is a suitable covering for protecting the plants from excessive rains. A skeleton frame should be made on which to place the iron sheets, slightly tilting them in order that the rains may run off them freely.

Forcing Seakale.—More Seakale should be introduced to heat at suitable intervals for succession. Place the fresh roots in warmth before the previous batch is too far advanced. By doing this a succession may be maintained. Seakale crowns may be placed in 9-inch pots, stood in a cool frame, and drawn upon for introducing into heat as required.

Mushrooms.—During the early part of the year a good supply of mushrooms is of great value owing to the growing scarcity of other vegetables. To maintain a continuous supply continue to collect fresh horse droppings for making new beds. Turn the manure at regular intervals to allow the rank gases of fermentation to escape, and when sufficient has been procured make the bed forthwith as firmly as possible by beating with a mallet every layer of dung as it is put in position. Syringe the beds and walls and maintain a temperature from 60° to 65°.

Perpetual Spinach.—This green vegetable provides a welcome addition to the winter supplies; the plant is hardy and of free growth. Keep the surface soil stirred with the hoe, as this will help to promote growth during open weather.

HARDY FLOWER BORDER.

DOUBLE POTENTILLAS.

These showy perennials are not grown so generally as their merits deserve, for they are hardy and continuous in blooming, and make excellent subjects for the flower border, for beds, or for cutting purposes. Potentillas are easily grown in almost any kind of soil, but to get the best results, well-rotted farm-yard dung and a sprinkling of bone-meal should be well incorporated with the soil. A surface dressing of soot will also be found beneficial, and after planting lime should be dusted between the plants. These useful decorative plants flower from June till late autumn. The following varieties include both strong growers and free-flowering sorts, their height ranging from one foot to two feet: Hamlet, dark crimson; Vase d'Or, large, deep yellow; Beelzebub, dark red; Yellow Queen, a very fine late variety; Emile, red edged with yellow; Van Dijck, yellow striped with red; Mont d'Or, large, yellow, and very double; Vulcan, rich deep crimson; Mons. Rouillard, crimson-maroon edged with yellow, a very fine sort; purpurea plena, purplish carmine; Victor Lemoine, red edged with yellow; californica, canary yellow; and Laurium, yellow mottled with red. *G. L.*

ALPINE GARDEN.

HYPERICUM NUMMULARIUM.

If the opinion of plant collectors who have visited the Pyrenees differs very markedly regarding the prevalence of this species—some saying it is rare, others that it is abundant—there is not much doubt but that it is uncommon in gardens generally. The main difficulty is in getting the correct plant. H. nummularium is listed by many nurserymen, but more often than not another species is supplied.

In my experience this is by no means so robust a plant as many of its kind. It does not appear to flourish in warm, sunny places so freely as H. reptans, for example, and if planted in cool, damp spots which it enjoys in summer, our winters may prove too much for it.

H. nummularium is an elegant, slender-branched plant. The fine stems are usually quite prostrate, about six or more inches in length and furnished with pairs of almost round leaves. The latter are glaucous, inclining to a ruddy hue in summer, and the undersides are paler than the upper, which are faintly dotted with minute spots. The terminal head of golden-yellow flowers is brilliant and very refined.

PRIMULA SECUNDIFLORA AND P. VITTATA.

These two Primulas are similar in growth, time of flowering, and colour of the flowers, yet they are quite distinct.

P. secundiflora will probably appeal more to the majority of people; the neat rosette of leaves is very attractive, each leaf being beautifully and minutely serrated. The flower stem, which is from six inches to one foot in height, the pedicles, and calyces are covered with a dense meal. The drooping flowers, few in number, are deep Plum or crimson-purple in colour, with a rich velvety sheen. It is somewhat interesting that, notwithstanding there is farina on the flower stem, pedicles, and calyces, the leaves are bare of meal.

P. vittata differs very considerably on a close examination; the leaves do not possess serrated margins, they are longer and smoother of surface. The stems show a total or almost a total absence of meal and are not nearly so stout as those of P. secundiflora, and the drooping flowers are not so richly coloured, although of the same shade. *Ralph E. Arnold.*

MISTLETO.

The observations made in *The Gardeners' Chronicle* of November 15 cannot fail to have proved interesting to all who have studied our native or other species of Mistleto.

Our common Mistleto, as is generally known, is dioecious—bearing male and female flowers on separate plants. Five years ago I inserted four berrries beneath the bark on a branch of a Lord Suffield Apple tree and now find there are three male plants and one female on the bunch. The female plant carries about a dozen berries, but the Missel thrush has commenced to use them for dessert. The propagation of Mistleto is quite a simple matter, and it is most interesting to watch the development of the seedlings during the first and second years after sowing.

Those who propose to propagate Mistleto should obtain the berries as late as possible in the season and select those which are most transparent. After washing the viscous matter from the seeds, the latter should be thoroughly dried, wrapped in blotting paper and stored in a cool place until the sap is rising freely in the tree to be operated upon. When the due season arrives, make a T-shaped slit about three inches in length on the underside of the branch, lift the bark and insert three to five seeds, pressing them in firmly so that they will lie snugly against the cambium; then bring the bark edges neatly together and Nature will do the rest. The accompanying illustration (Fig. 340), shows the growth from four berries in five years.

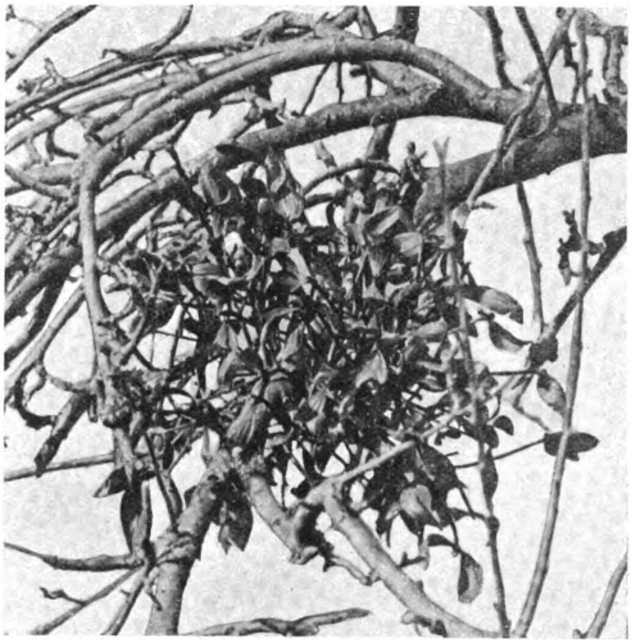


FIG 340.—A CLUSTER OF MISTLETO: FOUR PLANTS, FIVE YEARS OLD FROM SEED-SOWING.

Mistleto has its geographical likes and dislikes. In Herefordshire it grows freely, and trees often suffer from it, especially when it becomes established on several prominent branches. On one occasion I cut a bunch of Mistleto weighing eighty-three pounds, beautifully berried and quite round in outline. The lichen covered branch was cut on either side of the bunch, so that I obtained a real Mistleto bough. The largest bunches of Mistleto I have ever seen are at The Grange, Alresford, the seat of Lord Ashburton. At one period the Alresford Mistleto was zealously guarded, and in one of the rooms of the mansion a huge mirror was so placed as to bring the whole of the avenue within view of the watcher, whose duty it was to keep away poachers.

Mistleto may be grown on the Lime, Maple, Thorn, Apple, and Poplar, and it has also been found on the Oak, but not so frequently as legend would have us believe. *Pomona.*

THE "OLD-WORLD" GARDEN.

Very careful planning is required in the formation of an old-world garden in the precincts of a modern dwelling. The indiscriminate planting of herbs, flower roots, and shrubs which are generally supposed to be favourites of a by-gone age, will not produce the desired effect.

Where such a garden is in contemplation a site partly enclosed by buildings or trees should, if possible, be chosen. One knows the effect produced by old, crumbling walls in many old English gardens. It is impossible to produce this effect in a new garden, but much may be done by careful building.

Evergreen subjects such as Box, Ivy, and Yew are sometimes essential to provide seclusion. In the planting of such a garden the maker need not rely solely on such subjects as Rosemary, China Roses, Hollyhocks and Southernwood. Many plants of comparative recent introduction may be used, with discretion.

As regards paths, loose paving stones should not be simply laid upon the surface of the soil. If stones or bricks are used for this purpose they must be laid in a firm, workmanlike manner. Box edging is often found in old gardens, but for our purpose no objection can be made to the use of Thrift, Pinks, or some of the close-growing Thymes. Plants which produce sweet scent should be conspicuous in the garden. Many subjects will readily come to mind for use in summer. If the garden is much frequented during the winter, use may be made of Chimonanthus (Winter Sweet), Daphne Mezereum, and D. M. album, also the Winter Heliotrope (Tussilago fragrans). *C. Ruse, The Hyde Gardens, near Luton.*

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C.2.

Editors and Publisher.—*Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the* PUBLISHER; *and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the* EDITORS. *The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.*

Local News.—*Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.*

Special Notice to Correspondents.—*The Editors do not undertake to pay for any contributions or illustrations, or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.*

Illustrations.—*The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.*

Urgent Communications.—*If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard, 1543.*

GARDEN-CRAFT IN THE CANTICLES—XI.

THE KING'S GARDEN.

THIS series of papers would be incomplete if no reference were made in them to the Royal Gardens. They are mentioned in the "Song of Songs," both under a figure of speech (IV. 16, V. 1) and by direct allusion (VIII, 11). Elsewhere the situation of the King's gardens is specified (2 Kings, XXV. 4), and allusion is made to the gate nearby (Nehem. III. 15), which bore the name Gennath, from *gan*, a garden. It lay near to the famous Pool of Siloam, and we have already remarked on the presence of pools in connection with the old-time gardens. They were anciently placed, as a rule, outside the city walls, and in Jerusalem only the very ancient flower gardens which had existed from the days of the prophets were allowed within the boundaries. From Josephus we learn that when Titus marched upon the Holy City he found himself in great peril on account of the gardens and hedges which abounded in the suburbs on the side of approach. From the Preacher (Eccles. II. 4), speaking in the name of Solomon, we learn that gardens were among the great works which he planned for his pleasure. "I made me great works: I builded me houses; I planted me vineyards; I made me gardens and orchards, and I planted trees in them of all kinds of fruits; I made me pools of water, to water therewith the wood that bringeth forth trees."

Many are the references made in the writings of travellers in the Holy Land to the gardens and orchards which Solomon is said to have planted. The following paragraph from the pen of Dean Stanley is characteristic. "In the long green vale of Urtâs, unusually green amongst the rocky knolls of Judea, Solomon planted him vineyards and made him gardens and a 'paradise.' From these gardens came, in part at least, the imagery of the Canticles, and in these, probably more than anywhere else, the wise King cultivated his knowledge of trees from the transplanted Cedar to the native Hyssop. The great reservoirs still remain; and the huge square hill in its neighbourhood is known to the Arabs as the Jebel-el-Fureidis or Mountain of the Little Paradise, evidently from its vicinity to the gardens of the Wady Urtâs."

This quotation is of interest for more than one reason. The name Urtâs or Artâs is an evidence of Rome's influence in Palestine, for it is merely a local way of representing the Latin word for a garden—*hortus*. Equally curious is the name given to the adjoining hill by the Arabs; for just as Urtâs is a Roman legacy so Fureidis is a Persian, since it comes from the word which we use in our own language under the form Paradise. The Hebrew word *Pardes* does not come from the native verb *parad*, to separate or part-off by an enclosing wall, though no doubt popular etymology favoured that idea. It was borrowed from the Persians, who, as many early writers have informed us, took great delight in their parks and pleasure grounds.

In all Eastern lands, indeed, such gardens, orchards, and parks were laid out and maintained in connection with the royal domains. Solomon did exactly what the great Kings of Assyria, Babylonia, and Persia did both before and after him. We recall the Hanging Gardens of ancient Babylon, reckoned by the Greeks among the seven great wonders of the world. Tiglathpileser I., eleven centuries before Christ, records that he took away from the lands which he conquered Cedar and other trees such as no earlier King of his race had planted, and placed them in his parks. Valuable garden fruits, also, which were not to be found in his own country, he carried away, and caused the plantations of Assyria to bear these fruits. A list of seventy-two trees, shrubs, and plants is found on an early Babylonian document relating to the gardens of Merodach-baladau. If we refer to the book of Esther we shall discover a striking illustration of the fact that Kings' gardens were of royal dimensions. In the court of the garden of the King's palace were entertained to a feast all the people of Shushan, both great and small, seven days (Esther I. 5). Nor has this love of the garden passed from the monarchs of the East to-day. Rawlinson tells us how he was received by the Shah of Persia at Teheran during the last century in the Garden of the Gulistan. "The garden thus named is a large square enclosure of about one hundred yards extent, adorned as usual with Chenar trees and a basin of water in the centre," and being approached through a series of narrow, gloomy passages, burst upon the gaze in a way to suggest the epithet, 'the splendid and delightful Garden of the Gulistan.'" The very term Gulistan itself means a flower garden or rosary, the Rose being termed *gul* or *ghul* in some Eastern tongues, including Persian and Turkish.

Layard, the famous traveller and antiquary, tells us in his *Early Adventures in Persia* (p. 198), how on one occasion he was held up on account of the late hour on the plain of Baghi-Malek where he had stopped at an encampment for the night. The name means the King's Garden, indicating that in earlier days it corresponded with the Urtâs or Paradise of Solomon. Persia and Turkey have long been famous for their gardens. Ages before the Asiatic Ranunculus was known to European florists it had been cultivated at Constantinople, where it had been introduced into the gardens of the Sultan by his vizier Mustapha. He was a lover of beautiful flowers, and having discovered this hitherto neglected plant, caused varieties of it to be collected wherever they could be found. A good deal of history and romance relating to this and kindred forms of Ranunculus may be found in the pages of Gerarde's *Herball*.

As in Turkey so in Persia, concerning whose royal gardens Sir H. M. Stanley writes as follows in *Early Travels and Adventures* (II. 295), after alluding to "the Ghulistan or Garden of Roses." On the first floor of the Treasury "the first room overlooked the garden, which presented all the graces of Oriental horticulture, aboriculture, and floriculture; clumps of white and purple and crimson-flowered Rose bushes, plots of Narcissus and Hyacinths, arborets of Fig trees and Willows, avenues shaded by creeping vines, hedgerows of Box, smoothly swept paths flanked by Poplars and Chenars, conservatories of foreign plants and trees, goodly plots of Strawberries, fringes of Azaleas, Gilliflowers, Sweet Williams, and Musk Roses, with gleaming streaks of water and spurting fountains, which constitute the Persians ideal of a garden. The perfume from the flowers was almost oppressive." It might be in language like this that the gardens of Solomon could have been described, except that the range of plants in his day was less wide. The gardens of Shiraz, including the Garden of the Throne (Bagh-i-Takht), and the Envy of Paradise (Resek-i-Behesht) are also described by Stanley in the same work (II. 394).

The district which was formerly known as the King's Garden or the King's Dale near Jerusalem is still to be found in the place where the Valley of Hinnom joins that of the Kidron. It is still a beautiful spot, full of fruit trees and carefully tended garden plots, between which meander the narrow channels or streaks of water such as Stanley saw in Persia. Josephus alludes to the spot in the chapter of his *Antiquities* (VIII. 7, § 3), in which he treats of Solomon's greatness. "The King himself rode upon a chariot. He had on a white garment, and used to take his progress out of the city in the morning. There was a certain place, about fifty furlongs distant from Jerusalem, which is called Etham, very pleasant; it is in fine gardens, and abounding in rivulets of water; thither did he use to go out in the morning." Whiston, who like most writers until recent times, assumed that Solomon wrote the Canticles, remarks that "whether these fine gardens and rivulets of Etham, whither Solomon rode so often in state be not those alluded to (Eccles. II. 5, 6), and to the finest part whereof he seems to allude, when in the Canticles he compares his spouse to a garden enclosed, to a spring shut up, to a fountain sealed (chap. IV. 12), cannot now be certainly determined, but may very probably be conjectured."

Pomegranate, Fig, and Almond trees still flourish in the district where, of old, stood the little town of Bethany, and these are the remains of ancient gardens which in the days of the Hebrew monarchy and later were its pride and glory. The royal gardens may not have been situated in one locality only, they were probably in Solomon's day widely distributed in the most fertile suburbs. From St. John's Gospel (XVIII. 1) we learn that there was by the brook Kidron a garden which Jesus loved. It has been already mentioned as bearing the name of the King's Garden or Dale. This is the Garden of Gethsemane, and it is interesting to think that it may have been planned and planted under the direction of Solomon himself, and may be the very garden which the writer of the Canticles had in mind when he makes the King say, "I have come into my garden."

Allusion cannot be made to all the literature of this extensive subject, but I cannot close without drawing attention to one of the most recent works which throw light on our study. In the Chapter (II) devoted to The Garden, Rabbi Feldman has given us much valuable Rabbinical garden-lore in his *Parables and Similes of the Rabbis*. Thus he tells us (p. 42) of the King who went forth to roam in his garden, park or paradise with his tenant, and found him hiding, like Adam in Eden. Hebrew literature dwells much on the King's Garden, and the inspiration of the more recent writers is to be found in the book which has been the subject of our study.

In taking leave of my readers I commend all who love the garden, the flowers, the fruits, the trees, and the spices, to give the "Gardeners' Lyric" their most loving attention. It is the choicest piece of writing on garden-lore which antiquity has handed down to us, and no Roman, Greek, or Persian poet has been able to eclipse its author. *Hilderic Friend.*

TREES AND SHRUBS.

SALIX BABYLONICA

The accompanying illustration to this note (Fig. 341) portrays a very picturesque, though simple, effect obtained by the graceful Salix babylonica used in combination with a Water-Lily pool and depicts how a small area of water may be rendered charming by its association with such a graceful tree, that is delightful throughout the winter by reason of the many hues of colour in the leafless branches.

The illustration represents a picturesque scene in Kew Gardens, and the Willow, in addition to its beauty, has an interesting historical association, for it was raised from a cutting taken from the famous tree on the Island of St. Helena, under which Napoleon sat in his enforced retirement and beneath it, on his death, his body was buried.

As Mr. Osborn pointed out in his recent article on "The Willows" (p. 390), there are other species which are serviceable for waterside planting, including S. vitellina and its variety britzensis, which are very attractive in winter by reason of their coloured stems and may be kept within reasonable bounds by close pruning if shrub-size specimens are required; S. Salamonii, a tree of graceful proportions and remaining long in leafage, and S. alba, a native tree with ashy-grey and silky foliage. *R.*

SALIX BALFOURI.

The history of this hybrid Willow reads almost like a romance. It was first gathered in Glen Isle, Forfar, in 1837, and was recently discovered in the herbarium of the salicologist, Borrer. The label showed that it came from the herbarium of J. H. Balfour, at one time Professor of Botany in the University of Edinburgh. Neither of these botanists was sure of its identification, for on an attached slip were written, "Why not S. lanata? W. B." and "Probably S. Caprea by its stipules, 1847." The discovery and identification of the old specimen was made by the Rev. E. F. Linton, who named it Salix Balfouri (S. Caprea × lanata) nov. hybr. This is the only right the plant has of being considered a British Willow. The specimens in cultivation may be from the male tree that was raised by artificial hybridisation by the Rev. E. F. Linton in his garden at Edmondsham, Bournemouth; the illustration in *The Gardeners' Chronicle*, p. 391, Fig. 326, is very similar to the hybrid in question, judging from my dried specimens of it. The hybrid has been known for many years in Norway and Sweden, and was named S. lanata × S. Caprea, Floder., in 1891. The hybrid was also named × S. lanatella by the French Botanist Rouy, in 1904. The hybrid has thus been given two names, independently of that indicated by the parentage. The eminent salicologist, S. J. Enander, also collected a female form of the plant, which he described as the form medians in his *Scandinavian Willows*. The fact that two names have been given to it has probably been overlooked by Mr. A. Osborn (see *Gard. Chron.*, p. 390, bottom of third column). *J. F.*

SPIRAEA DISCOLOR.

We have been disappointed in this species, for whilst it is a very beautiful object when in flower, the plume-like, creamy-white panicles are so ephemeral that they turn a rusty brown in a few days.

In habit, S. discolor (syn. ariaefolia) is all that could be desired; its foliage is distinct from others of its class and, coming from western North America, it is perfectly hardy. But I have decided that, where one has to place some limit upon the number of shrubs of this kind on the score of accommodation, S. discolor has to go in favour of S. Aitchisonii, S. Lindleyana, and S. arborea. *J., North Wales.*

NOTICES OF BOOKS.

The British Flora.

We have always maintained that there is no better book than Bentham's *Handbook* for the beginner in field botany. By the aid of its admirably arranged keys and terse and accurate descriptions we learned to recognise without difficulty most of the common plants of our district while we were yet in our teens, and it has been the stand-by of several generations of field botanists.

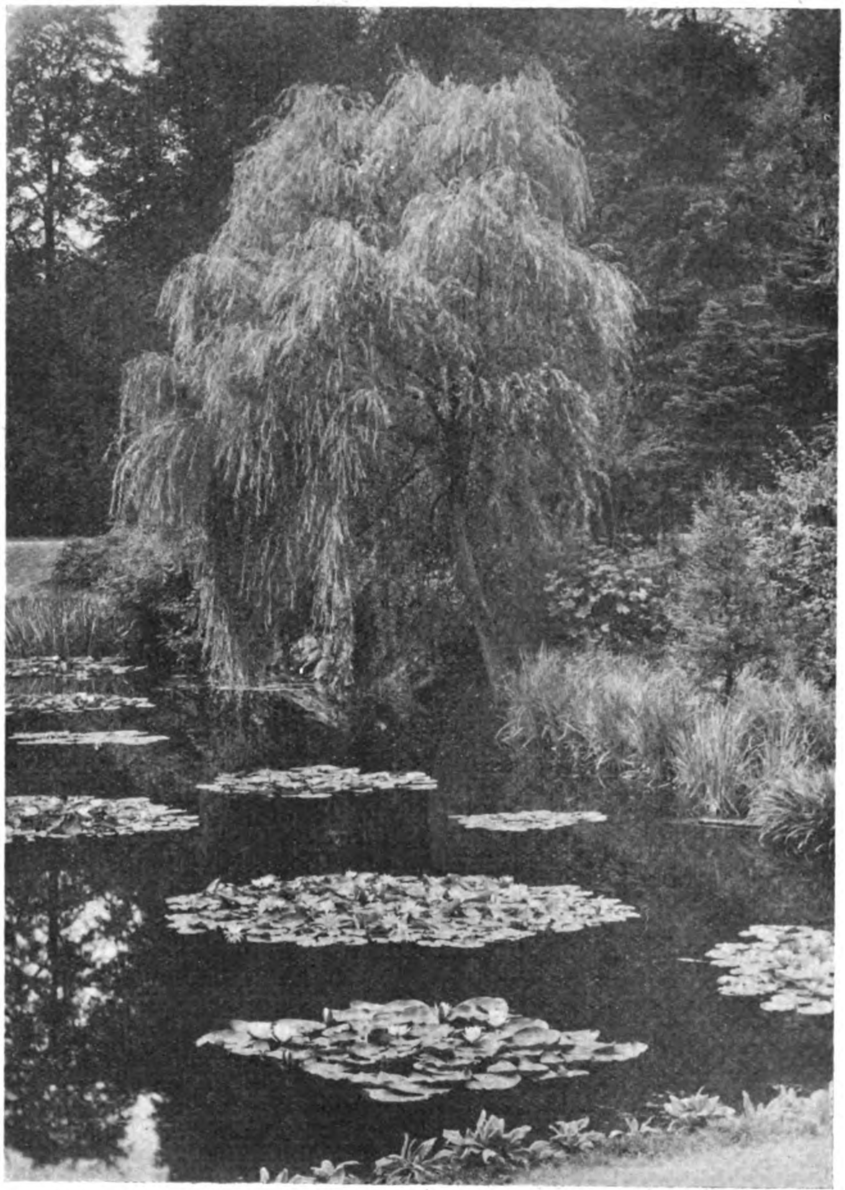


FIG. 341.—A BEAUTIFUL WEEPING WILLOW (S. BABYLONICA) HANGING OVER THE LILY POND AT KEW.

The seventh edition* since the book first appeared in 1858, and the third since Bentham's death forty years ago, is really little more than a reprint of the last revision for which Sir Joseph Hooker was responsible in 1892, with the additions to our flora since that time, and some name changes which were considered inevitable. Dr. Rendle, the editor of the present re-issue, states that he undertook the revision with considerable hesitation, and at this we are not surprised as the book has long been out of date, and it is impossible to make a satisfactory work of it (good as it is, within limits) without altering the old framework, or, in other words, entirely re-writing it. The new work differs chiefly from the last in the omission of the chapter on Vegetable Anatomy and Physiology, which was out of date and not really needed in a book of this kind. The derivation of the generic names and indications of pronunciation have been added with advantage. Critical treatment of the flora cannot be expected in a work of this kind Here and there attempts have been made to compromise the "splitters" and the "lumpers," sometimes with curious results. Thus in the account of the Limes (pp. 91 and 92), Tilia europaea, Linn., by a process of name juggling, appears both as a species and a hybrid. We note that many so-called English names which no one ever thinks of using, such as "Suffocated Clover," "Cut-leaved Cranesbill," "Divided Sedge," still persist. Occasionally these names are inaccurate and misleading, as on p. 429, where Populus nigra is described as the Black or Italian Poplar, the latter being a perfectly distinct tree, which is not a native of Britain. On page 431 the Scots Pine is still called the Scotch Fir, although a few lines previously the student has been warned that it is "no Fir but a true Pine." We observe, too, that the additions which embrace several well-marked species are not included in the keys, and are moreover not consistently treated. The recently discovered Carex microglochin (p. 508) is given a separate number, while the equally distinct C. chordorrhiza is merely placed under C. divisa. Why should not Populus canescens be given equal rank with the other British species instead of being placed under P. alba (p. 429). The Tacmahac and Balsam Poplars are not the same species as indicated on p. 428. There is no reference to Scorzonera humile, found under apparently natural conditions in Dorset.

---

* *Handbook of the British Flora.* A description of the Flowering Plants and Ferns indigenous to, or naturalised in, the British Isles: For the use of beginners and amateurs By George Bentham, C.M.G., revised by Sir J. D. Hooker, K.C.S.I., F.R.S. Seventh edition revised by A. B. Rendle, F.R.S. Crown 8vo. Pp. lxi. + 606. Price 12s. net. L. Reeve and Co.

The companion book of *Illustrations*† has now been made a self-contained work by the addition of the synopsis of classes of families and a repetition of the analytical keys to the families which appear in the *Handbook*, and its usefulness thereby much increased. Several new drawings have been added; Carex chordorrhiza and Stachys alpina might well have been included among these. The wood-cut which does duty for Populus nigra, copied from Symes' *English Botany* (t. 1302), needs re-drawing, representing as it does the foliage of that species but the catkins of P. canescens. It is remarkable that this error has remained undetected for so many years. In conclusion, we would suggest that it is high time a new English Flora on the lines of the best Continental and American models was undertaken, and we hope that some competent British botanist may be soon induced to complete it.

THE BANANA IN UGANDA.

The importance of the Banana as an article of food in the Tropics generally is known to most people, but probably few are aware that over large tracts of Africa it is the sole item of diet of countless thousands of lusty negroes.

Like the Sweet Potato, our own universally-grown Potato and many other economic plants, it is one of the subjects that has become of greater importance in the land of its adoption than in its native habitat, for although Central Africa has several native species of Musa, the edible forms of M. sapientum are not native there.

All African tribes esteem the Banana as a food, but it is in the Buganda kingdom of the Uganda Protectorate that the fruit has reached the highest position in the dietary of a nation; it can, in fact, be said that it forms ninety-nine per cent. of the food of the people. Nor can it be denied that it is a complete food, for the Buganda dominated that part of Africa before the advent of the white man, and exacted tribute from the surrounding kingdoms, who are either grain or meat-eating peoples. They were described by the earliest travellers as the "Japanese of Africa," and their superiority in intellect they maintain to-day. They have quickly assimilated a good deal of our civilisation. To-day, most of the younger generation can read and write. They have discarded their national dress of bark-cloth in favour of American and Manchester cotton goods, but they still retain their diet of Bananas. They will grow a few of our introduced vegetables, such as Peas, Potatos and Cabbages, but not for their own consumption. The Banana, for them, is a necessity and all-sufficing.

The fruit is used in a cooked state. The bunches are cut when mature in size, but before the fruit colours or sweetens. The Bananas are peeled, wrapped in green leaves, and steamed. They turn out a golden-coloured, stodgy mass, rather flavourless to our taste, but not more so than our own Potato when cooked without salt. A ration for an average man would be a fair-sized bunch weighing about forty pounds when cut, which, when cooked, would about half fill a bucket. Peasants will eat such a meal in the evening, and, after a night's rest, rise in the morning and do a good day's work without further food.

Besides food, the Banana also provides drink. Ripe fruit is used to make this, the juice being pressed out of it by kneading it with grass. This gives a very sweet wine, a very refreshing drink after a hot march. By adding malted Millet to this juice a liquor of considerable strength is made, whilst distillation (a process well understood by the savage) gives a very potent spirit.

The Banana flourishes exceedingly in the fertile soil of Uganda (Fig. 342). To establish a garden, the grass is hoed off and burnt. The soil is then hoed a few inches deep in order to remove the roots of weeds. Strong rooted suckers, five feet high, are then planted in holes made sufficiently large and deep enough to hold them. The suckers at once commence to unfold their leaves, and quickly reach their maximum height of twelve feet, when the bunch of Bananas appears at the top. At about eighteen months after planting the sucker the bunch is ready to cut. The whole growth is, of course, cut down with the bunch, but by this time the crown has sent up several other growths, and the fruits of these mature in succession. From this time onwards a root or stool will consist of eight or nine suckers, each in a successive stage of growth, thus making the crop a continuous one. A garden lasts, certainly, a good many years. Very little cultivation is given. The dense shade of the plants keeps down weeds, and the growths which are cut out are slashed up and spread over the soil as a mulch.

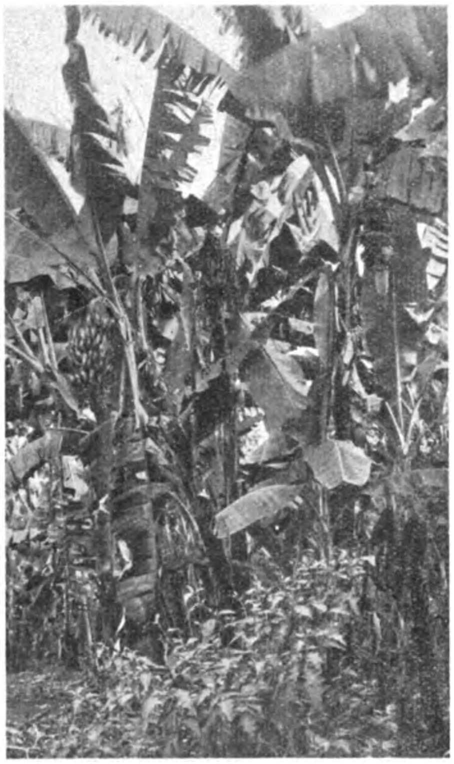


FIG. 342.—BANANAS IN FLOWER AND FRUIT IN UGANDA.

A garden of this nature, about half-an-acre in extent, will provide sufficient food for an average family, year in and year out. I believe no other crop gives such a quantity of food per acre as the Banana. I believe that life is nowhere more easy and care-free than for the native of Central Africa. A drought which would affect his crop is very unlikely to occur. No pests trouble the plant, except that in certain districts a rivolous elephant may playfully trample the garden. Having once planted his plot, the native may sit down and be assured that a kindly nature will produce for him sufficient of the food and drink he loves the best for little more labour on his part than the actual cooking and preparation of it.

It used sometimes to be said by those of us who suffered from shortage of labour, owing to the disinclination of the native to enter any employ, that if only the Banana were as subject to pests, and as difficult to grow, as Coffee, it would probably result in the much more rapid development of Central Africa. *E. Brown, Sittingbourne.*

CULTURAL MEMORANDA.

WINTER PRUNING.

Pears, Plums, and Cherries are usually pruned first, then Apples, bush fruit, and, lastly, wall trees generally. When the pruning is deferred until January, cold weather not infrequently sets in with such severity that the work is hindered, and there is some risk of spring being upon us before it is done. Therefore, let no opportunity be lost in pushing on with this work.

Thin all crowded spurs and branch growths, for without free admission of air and light among the branches the trees cannot continue healthy, nor the fruits become fully developed. My object in pruning is not only to render a tree fruitful, but to ensure, so far as I can, the production of really fine fruit. Guard against excessive pruning of Cherry trees; they are always liable to suffer so much from severe pruning that trees treated thus often die.

Lateral growths shortened to six inches in August should be pruned to two or three buds. In pruning do not make a long oblique cut, but rather a short one, taking special care that the bottom part of the cut is above the bud in order that there may be plenty of tissue around the base of the latter to ensure a free flow of sap to it when growth begins. See that the growth of all young trees is shortened sufficiently to ensure a free lateral growth, and take care that the lower branches of pyramids and palmette verriers have a sufficient start to ensure robust growth before the upper branches make much progress.

In the case of bush fruits prune away the old wood of Raspberries and Blackberries, and tie in new growths for next years crop. Raspberry canes should be shortened to about four feet; it is quite immaterial whether Blackberries are shortened or not; but it is important to have new growth for fruiting and not old spurred growth.

Thin the shoots of Black Currants, cutting out old crowded growths clean to the ground. Red and White Currants and Gooseberries may also be pruned, and the bushes should then be syringed well with soft soap dissolved in hot water, and a mixture of lime and soot. See that the branches are well coated with this material to keep the buds safe from the ravages of birds.

Let the annual surface dressing of the whole of the soil among the bushes and Raspberries follow at once. Old hot-bed or half-decayed stable or cow manure answers admirably for this purpose. There should be no digging among the bushes; only apply the surface dressing of manure, which serves both to keep the bushes healthy and vigorous and to keep down caterpillars in summer. *James A. Paice.*

---

† *Illustrations of the British Flora.* A series of 1,321 wood engravings with dissections of British Plants drawn by W. H. Fitch, with additions by W. G. Smith and others, forming an Illustrated Companion to the above. Crown 8vo. Price 12s. net. L. Reeve and Co.

HOME CORRESPONDENCE.

The Gardeners' Status.—I have of late been studying advertisements relating to gardeners, and this has led me to wonder what exactly is a gardener, or rather what is expected of him. The Royal Horticultural Scoiety defines horticulture as "a definite craft of itself, and includes the more intensive cultivation of fruits, vegetables, flowers, shrubs, and ornamental trees." When one considers the high degree of specialisation which each of these branches has now attained, one realises that "simple" gardening is not so simple as it seems. Quite recently I read, with reference to the training of a modern gardener, "he should have a theoretical and scientific education based on practical experience; a knowledge of botany, systematic and geographical, and a knowledge of plant anatomy and physiology would be helpful to the cultivator, while a better understanding of soils and manures might be obtained by the study of physics, chemistry, and soil biology." I agree that a modern gardener must study, but let me return to my question—what is a gardener? and quote from one or two of those advertisements I referred to. Here s one, of a type all too frequent: "Experienced gardener, run electric light engine and plant; keep "car" clean, care of chickens; act caretaker; when owner is away; wife ready to help in house. Boy kept." Is it a gardener who is required or an odd man? and if the latter, why should he be called "gardener"? Others of a similar type are: requiring knowledge of "alpines, Roses, flowering shrubs, and motor mower"; "Wanted gardener for hotel, assist porter's duties." Again, how frequently one sees: "No small children"; "wife to assist in house." Taking into consideration the fact that most unskilled labourers are better paid than gardeners, can one wonder that numbers of keen men are leaving such an unsatisfactory, unremunerative profession? A concrete case I have in mind is where unskilled men are receiving 1*s*. 4*d*. per hour, yet, working for the same people, qualified gardeners receive a fraction over 11*d*. per hour. Many others are in similar positions, and I am one of them. *Discontented.*

The Lily of the Field.—Referring to the article by the Rev. Hilderic Friend in *The Gardeners' Chronicle*, p. 354, the writer mentions Anemone coronaria as the plant generally considered to be the Lily of Scripture alluded to by the "Great Teacher." I had some roots of Ranunculus asiaticus, a scarlet variety from Palestine, that were said to be the Lily of the Field mentioned in Scripture. Do Anemone coronaria and Ranunculus asiatiacus grow there together? Or has one been mistaken for the other? I should be greatly obliged for further information on the subject. *S. T.*

[The words Lily, Rose, Apple, Nut, etc., are used in a wide sense in Scripture, and unless a specific meaning is indicated they are to be understood of flowers, fruits, and nuts generally. Alike in the "Song of Songs" and in the teachings of Jesus, the word Lily is equivalent to our general term "Flower." *Κρινον* in Greek (krinon) whether classical, New Testament, or modern, means Lily, but also flower. So the Hebrew Shushan שושן used both in *The Bible* and in the New Hebrew Translation of the New Testament, in Canticles, Matthew VI., 28, Luke XII., 27, etc., where the Yiddish or Modern Jews use the German *Lilien*. The words "Lilies of the Field" in the New Testament are best understood in the general sense of Flowers of the Field. But if it be asked, what flowers in particular? it may be said that the Anemone or the Ranunculus (both Ranunculaceae) are the first claimants for the honour. The one has not been mistaken for the other by any competent botanist. They are each universal in Palestine, and if any authorities on the flora of the Holy Land are consulted such statements as this will be found:—Anemone coronaria, everywhere common. Ranunculus asiaticus, of universal occurrence. There are Lilies in Palestine, using the word in the stricter sense, but our Lily-of-the-Valley was certainly not the Lily of the Field referred to by the Master. *Hilderic Friend.*]

FRUIT REGISTER.

BULLACE LANGLEY BLACK.

This useful November variety is worthy of more extended cultivation both in private and commercial gardens.

All varieties of Bullace will succeed in any odd corner or out-of-the-way place provided the soil contains lime. If the soil lacks lime this may be readily applied in the form of chalk, bonemeal, slaked lime or basic slag, using bonemeal and basic slag together or lime and bonemeal in association.

An application of mortar rubble will prove beneficial to the trees at the time of planting.

Langley Black was put into commerce about 1902; it was raised by Messrs. James Veitch and Sons by crossing Early Orleans Plum and Farleigh Damson. The fruit is of medium size, oval in shape, and dark purple in colour. The flavour is excellent, and ripening in November it is one of the best late members of the Prunus family in cultivation.

Black Bullace is a very old sort, and often found in woods, especially where chalk abounds.

In some parts of Hampshire this old Bullace is used in making the wine known as the poor man's winter brandy.

There is also a greenish-yellow variety, akin in shape and season to the above sort, known in some districts as Shepherds' Bullace, and most useful for the making of tarts.

APPLE GOLDEN HARVEY.

Golden Harvey or Brandy Apple is an excellent dessert Apple, with yellow flesh that is firm, crisp, juicy, and sugary, the variety keeping until May.

The few trees in this county (Hereford) are fast going to decay, the more's the pity, it being a variety of much excellence. The fruit is about two inches wide and about two inches high; the skin is entirely covered with russet, with a slight colouration of red on the side next to the sun; the eye is small and open; the stalk half-an-inch long, set in a shallow cavity. The crop of Golden Harvey is always abundant.

APPLE MARGIL.

I have always failed to understand why this grand dessert Apple is not more generally grown. The fruit is a useful size for dessert and will keep sound until March. This variety was known so early as 1750. The skin is orange-coloured streaked with deep red, and covered on one side with patches of russet; the eye is small and closed; the flesh is yellow, firm, juicy, rich, and sugary, with a fine aroma.

APPLE NORTHERN SPY.

This little-grown Apple was brought to my notice not far from Malvern, where I found a tree carrying a bountiful crop of highly coloured fruits, which appealed to me, as they gave off a delightful fragrance, and the intense bloom made the specimens look quite tempting. I cannot pronounce on its flavour as I did not taste it. The colour of this Apple is greenish-yellow with a pale crimson cheek, covered with broken streaks of a darker crimson, which intensifies with age. I was informed that the fruits keep sound until May. *Pomona.*

SOCIETIES.

READING AND DISTRICT GARDENERS'.

The last meeting of the 1924 session was held in the Abbey Hall on Monday the 15th inst., Mr. M. Goddard presiding over a very good attendance.

The subject for the evenings discussion was "Petroleum: its Uses and Abuses," and this was introduced by Mr. H. C. Loader, The Forbury Gardens, Reading, who based his remarks chiefly on a statement made at a former meeting that petroleum could not be properly mixed with water alone. He gave instances where petroleum mixed solely with water in a proper manner had given the desired effect by destroying insect pests and also mentioned that in some cases where the mixing had not been carefully carried out it had done great damage.

In the discussion that followed in which Messrs. Goddard, Young, Alexander, Townsend, Reeves, Priest, Waite, Howlett, Fulker and Terry, and the lecturer took part, many valuable hints were thrown out showing that a petroleum emulsion was the finest and the cheapest insecticide that could be obtained if used in a common-sense way.

The competition for three dishes of Apples brought a strong entry of twelve exhibits, the fruits being in good condition and of high colour, especially in the prize-winning lots. The first prize went to Mr. C. J. Howlett, The Yews, Earley; the second to Mr. A. G. Nichols, Goddards Farm, Mortimer; and the third to Mr. F. J. Green, The Gardens, Aldermaston Court. In the non-competitive section Mr. C. J. Howlett received an Award of Merit for a good collection of Apples.

ROYAL CALEDONIAN HORTICULTURAL.

The ordinary monthly meeting of this Society was held at 5, St. Andrew Square, Edinburgh, on December 2, Mr. R. Fife, President, in the chair. A paper was read by Mr. W. Besant, Assistant Director of Parks, Glasgow, on "Rock and Water Gardening." Mr, Besant dealt with the main features of rock garden construction, including site, drainage, etc., and pointed out that the aim should be to combine a picturesque effect with the requirements of the plants to be grown, into which he fully entered. The stones should be placed as naturally as possible, and ample provision made between them for suitable soil, which should be well packed, empty spaces in the soil being fatal to the welfare of the plants. In water gardening, he said, Nature should be followed as closely as possible.

The exhibits were:—Begonia Mrs. Leopold de Rothschild, from Edinburgh Public Parks Department (Cultural Certificate); Lachenalia Nelsonii, from Mr. W. Crighton, Morton Hall, Liberton (Cultural Certificate); and Chrysanthemums, from Mr. J. A. Sword, Inveralmond, Cram Cramond.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

The Monthly meeting of this Society was held in the Royal Horticultural Society's Hall, on Monday, December 8, Mr. Chas. H. Curtis presiding. Eleven new members were elected. Three members withdrew interest from their deposit account amounting to £4 19s. 4d. Sick pay for the month on the ordinary side came to £77 6s. 10d., and on the State side to £63 12s. 6d., while maternity benefits amounted to £18.

The sum of £13 17s. 6d. was granted to three members of the State Section towards dental treatment, and eight other cases were considered. The Trustees reported that they had invested a further sum of £1,000.

NATIONAL CHRYSANTHEMUM.

The final meeting of the National Chrysanthemum Society's Floral Committee for the year 1924 was held in the Royal Horticultural Hall on Monday, December 15. Very few flowers were exhibited, and only one gained an award.

First-Class Certificates.

Balcombe Beauty. II. 1 *b.*—A beautiful, decorative variety of reflexing, Japanese form and of rich, golden-yellow colour. It is a sport from the variety named December Bronze, and promises to be particularly useful for late flowering. In colour, form and stem it possesses qualities of the best class. Exhibited by Mr. A. J. Vinden, Balcombe, Sussex.

At the conclusion of business, a very hearty vote of thanks was accorded Mr. D. B. Crane, the Chairman, for presiding over the deliberations of the Committee throughout the year. The members of Committee decided to dine together early in the month of February, according to usual custom.

BRITISH FLORISTS' FEDERATION.

The Market Floral Committee of the British Florists' Federation met in Messrs. Monro's Salerooms on Monday, December 15, under the presidency of Mr. W. E. Wallace. The only subject placed before the Committee was *Chrysanthemum Sunshine Willcox*, a golden-yellow sport from the bright, bronze-coloured Miss Willcox. This was exhibited by Mr. Arthur Young, Oxted, and promises to be a particularly useful variety for flowering from the middle to the end of December. Except in colour, it is like its parent. A Provisional First-Class Certificate was awarded.

ANSWERS TO CORRESPONDENTS.

Grapes for Examination: *W. X.* We cannot find any disease present on the berries of Grapes sent for examination, and we think their bad condition has been brought about by faulty cultivation.

Names of Plants: *J. P.* 1, Send when in flower; 2, Begonia Haageana; 3, Anthurium Scherzerianum; 4, send when in flower; 5, Ophiopogon Jaburan. *W. R. B.* Tsuga canadensis (Canadian Hemlock).

Scabbed Potatos: *A. D.* The Potatos are affected with the common scab fungus (Actinomyces scabies), and although it spoils the appearance of the tubers it does not affect their table qualities. The disease may largely be prevented by adding fresh organic matter to the soil just before planting the Potatos, as may be done by turning in a green crop. The presence of lime, ashes and gravel in the soil favour the disease, and land which has yielded badly scabbed tubers, should not be utilised for growing Potatos again until a few years have elapsed.

Communications Received.—V. A. S.—T. H. W.—L. E. M.—C. G.—W. H. D.—A. H.

GARDENING APPOINTMENTS.

Mr. A. P. Smith, as Gardener to J. Reid Walker, Esq., Ruckley Grange, Shifnal, Salop.

Mr. P. W. Smith, for the past six years and nine months gardener to the Rt. Hon. Earl Amherst, Montreal Park, Sevenoaks, as Gardener to the Rt Hon. Earl Morley, Saltram, Plympton, South Devon.

Mr. T. Dent, previously for four years at Shobdon Court, Leominster, and seven years Gardener to the late Lord Trevor, Brynkinalt, Chirk, North Wales, as Gardener to Sir Charles Wiggin, Honington Hall, Shipston-on-Stour, Warwickshire.

MARKETS.

COVENT GARDEN, Tuesday, December 23, 1924.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0–18 0
—elegans	10 0–12 0
Aralia Sieboldii ...	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–18 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	48 0–72 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Begonia Gloire de Lorraine—	
—32's	54 0–60 0
—48's	42 0–48 0
—60's	21 0–24 0
Cacti, per tray, —12's, 15's ...	5 0– 7 0
Chrysanthemums, 48's, per doz. ...	12 0–18 0
Crotons, per doz.	30 0–45 0
Cyclamen—	
—32's	72 0–84 0
—48's	42 0–48 0
Cyrtomium ...	10 0–15 0

	s. d. s. d.
Erica gracilis, 48's per doz.... ...	21 0–30 0
— — 60's, per doz.	12 0–15 0
— — Thumbs, doz	6 0– 9 0
—nivalis, 48's, per doz.	24 0–30 0
— — 60's per doz.	15 0–18 0
— — Thumbs, per doz.	6 0– 9 0
—hyemalis, 48's...	18 0–30 0
Hyacinths, in boxes—	
—white and pink, per doz. spikes	— 6 0
—blue	— 7 0
Marguerites, white, 48's, per doz. ...	— —
Nephrolepis, in variety	12 0–18 0
—32's	24 0–36 0
Palms, Kentia ...	30 0–48 0
—60's	15 0–18 0
Poinsettias, doz.	18 0–30 0
Pteris, in variety	10 0–15 0
—large 60's ...	5 0– 6 0
—small	4 0– 5 0
—72's, per tray of 15's	2 6– 3 6
Solanums, 48's per doz	12 0–30 0

Cut Flowers, etc.. Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	15 0–18 0
—cuneatum, per doz. bun. ...	10 0–12 0
Asparagus plumosus, per bun.	
long trails, 6's	1 6– 3 0
med. sprays ...	1 6– 2 6
short „ ...	0 6– 1 3
—Sprengeri, per bun.	
long sprays ...	1 6– 2 0
medium „ ...	1 0– 1 6
short „ ...	0 4– 1 0
Bouvardia, white, per doz. bun ...	12 0–15 0
Camellias, White, per box ...	3 0– 4 0
Carnations, per doz. blooms ...	4 0– 6 0
Chrysanthemums, White, per doz. blooms	4 0– 8 0
—Yellow, per doz. blooms	4 0– 8 0
—Pink, per doz. blooms	3 0– 8 0
—White per doz. bunches ...	18 0–36 0
—Bronze, per doz. bunches ...	12 0–24 0
—Pink, per doz. bunches ...	18 0–30 0
—Red, per doz. bunches ...	18 0–30 0
Croton leaves, var., doz. leaves	0 9– 2 6
Daffodils, Trumpets, small ...	12 0–18 0
—best	30 0–36 0
—Soleil d'Or ...	10 0–12 0
Fern, French, per doz. bun. ...	0 9– 1 3

	s. d. s. d.
French Flowers—	
Chilies, per pad ...	8 0–10 0
Marigolds, per pad	7 0–10 0
Mimosa, per pad	8 0–12 0
—per bun. ...	1 3– 1 6
Narcissus, Paper White per pad	12 0–16 0
—doz. bun. ...	3 0– 4 6
Rananculus, double scarlet, doz bun.	24 0–36 0
—Carmine, per doz. bun ...	6 0– 9 0
Solanum fruits, 300's per pad ...	14 0–16 0
Violets, Parma, per bun. ...	3 0–10 0
—single, per pad	10 0–16 0
Gardenias, per box, 12's and 18's ...	12 0–15 0
Lilac, Dutch, per spikes	4 0– 8 0
Lilium lancifolium album, per doz. blooms	4 0– 5 0
—rubrum, long, per doz. blooms ...	4 0– 5 0
—short „ „ ...	1 6– 2 6
Lilium longiflorum long, per doz. ...	8 0– 9 0
short „ „ ...	7 0– 8 0
Lily of the Valley, per doz. bun. ...	24 0–36 0
Orchids, per doz.	
—Cattleyas ...	24 0–30 0
—Cypripediums ...	5 0– 7 0
Richardias (Arums) per doz. ...	9 0–11 0
Smilax, per doz. trails	1 3– 2 6
Tulips, on bulbs, per doz. ...	12 0–18 0
—cut, specials, per bunch	3 0–5 0
Violets, per doz. bun	1 0– 6 0

Remarks.—Although supplies of Chrysanthemums are much scarcer than they usually are at this time of the year, there is, nevertheless, a varied range of French flowers; foliage, too, is plentiful. French Tulips of the varieties Mon Tresor, Le Matelas, and Vermilion Brilliant are selling well for good quality blooms, but many consignments are poor and the blooms show signs of having been forced too hard. There are a few forced Daffodils on the market. Carnations are fairly plentiful while Roses are scarce. Foliage, both hardy and tender, is moving well, and good trade is reported with Christmas trees, Holly and Mistleto.

Vegetables: Average Wholesale Prices.

	s. d. s. d.
Beans, Guernsey, per lb.	— —
—Best	3 6– 4 0
—Others	1 6– 3 0
—Madeira, per box	2 6– 5 0
Beets, per cwt. ...	4 6– 5 0
Cabbage, per tally	3 0– 4 6
Cauliflowers, per doz.	3 0– 6 0
Celery, best, washed, per bundle ...	— 2 6
—Second	0 8– 0 9
Chicory, per lb. ...	0 3– 0 4
Carrots, per cwt.	3 6– 5 0
Cucumbers, per doz.	24 0–36 0

	s. d. s. d.
Endive, English per doz. ...	1 6– 2 6
—French	1 6– 2 6
Forced Asparagus	4 0–12 0
French Endive, per doz.... ...	3 0– 3 6
Batavia	4 0–10 0
Greens, per bag...	1 0– 2 0
Leeks, per doz. bundles	2 6– 3 6
Onions, English, per case... ...	7 0– 8 0
—Dutch	7 0– 8 0
Lettuce, per dozen	1 6– 2 6
Onions, Valencia, per case ...	10 0–11 0
Parsnips, per cwt.	3 6– 4 0

	s. d. s. d.
Turnips, per cwt.	4 0– 5 6
Savoys, per tally	5 0– 7 6
Seakale, per punnet	2 6– 3 6
Spinach, per bushel	4 0– 4 6
Sprouts, per bushel	3 0– 4 0
Horseradish, per bundle	2 0– 2 6
Mushrooms, cups	2 0– 3 0
—boilers	1 6– 2 0
Sweet Potatos ...	2 6– 3 0

	s. d. s. d
Paris Green ...	10 0–12 0
Potatos, per ton—	
—Dunbars ...	— 240 0
—King Edward	210 0–240 0
—Whites ...	90 0–200 0
—(Imported)	100 0–150 0
—New Guernsey	1 3– 1 6
— — Scilly ...	0 8– 0 9
Rhubarb, Forced, per doz.... ...	3 0– 4 0
Tomatos, English, Pink, ...	8 0–10 0
—Canary Islands	20 0–27 6

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
—Oregon Newtown	16 0–17 0
—Bramley's Seedling	8 0–12 0
—Cox's, per doz.	2 6– 6 0
—Californian Newtown ...	11 0–12 6
—British Columbian Jonathan, per case ...	12 0–15 0
—Albemarle, per barrel	35 0–37 6
—Baldwin ...	24 0–27 6
—Nova Scotia, Golden Russet	30 0–35 0
—Stark	22 0–27 6
—Greening ...	24 0–28 0
Bananas, singles	16 0–30 0
—doubles	17 0–30 0
Californian Pears—	
—Doyenné du Comice, ½ case	20 0–24 0
—Winter Nelis, per case... ...	18 0–20 0
—Beurré d' Anjou	17 6–18 0

	s. d. s. d.
Chestnuts, Spanish	23 0–24 0
—Italian	27 6–30 0
Grapes—	
—Gros Colmar ...	1 9– 3 6
—Belgian Royal, per lb.	1 6– 2 0
—Alicante ...	1 6– 2 6
—Muscats ...	4 0– 8 0
—Almeria, per barrel	20 0–26 0
Grape Fruit, Cuban	20 0–22 6
Jamaica Grape Fruit	32 6–35 0
Jamaica Oranges...	9 0–14 0
Jaffa Oranges ...	16 0–18 0
Kent Cobs, per lb.	1 0– 1 2
Lemons, Messina—	
—Boxes	8 6–12 6
—Cases	20 0–25 0
—Murcia	15 0–17 6
Oranges, Spanish	12 6–30 0
—Jamaica ...	12 0–15 0
Pears, Comice, (specials) per doz.	6 0–12 0
Pines	3 6– 6 6
Tunis Dates, per doz.	3 6– 6 0

Remarks.—The week opened with a much better feeling in the market and there was an improved demand for hot-house grown Grapes, although competition due to Belgian supplies is keenly felt. Stocks of Apples are ample and the demand is fair; Oranges also are a good trade at slightly improved prices. Owing to the delayed arrival of the second Christmas boat, Pineapples are very dear, while Nuts are also costly for the time of the year. Forced Asparagus, Beans and New Potatos from Guernsey are of firmer values and the first shipment of Canary Potatos arrived during the past week. Scilly Potatos are also on the market but are inferior to forced supplies. Mushrooms are selling well for the time of the year, as usually the week preceding Christmas is a bad trade. Salads are in request and Tomatos from the Canary Islands are in good demand at firm prices. Green vegetables are available in quantity at comparatively low figures. Trade in old Potatos continues steady at little or no change in prices.

GLASGOW.

At the time of writing the Christmas trade has not developed the activity that was anticipated. Retailers state that the high prices of cut flowers has checked business and this influence has in turn affected the market adversely so far as the turnover during the past week was concerned. Supplies were not very plentiful, and the scarcity of Roses resulted in many orders being placed direct with Covent Garden. Small blooms of Richmond realised 1/- each, and Mrs. Herbert Stevens touched 6/- per doz. Carnations ranged from 4/- to 6/-, while Arums and Lilium longiflorum averaged 10d. to 11d. each. Lily-of-the-Valley commanded 2/- for medium and 2/6 for large bunches. Montresor Tulips made 2/6 for 6's, and Hyacinths obtained the following prices:—White, 9½d. to 10½d.; pink, 1/- to 1/2; and blue 10½d. to 1/2. Narcissus fluctuated between 3/- to 3/6 per doz., and a small quantity of Sweet Peas made 1/- per bunch. Supplies of Chrysanthemums were not so large as hitherto and the quality was very mixed. Big special blooms of Favourite and Autocrat sold at 2/- to 2/6 for 6's, and Golden Butterfly and Framfield Pink brought 3/6 and 4/- for 12's. Other disbudded varieties may be quoted as follow:—Nevis and Golden Glory, 1/- to 1/3 for 6's; Miss Wilcox, 1/- to 1/6; Sunshine, 9d. to 1/-; Winter Cheer, 10d. to 1/-; and Heston White, 7d. to 9d. Lilac averaged 4/- to 6/- per doz., and Mimosa brought 6/- for poor stuff and 8/- per pad for good quality. Pans of Tulips were firmer at 1/6 to 2/- each; Hyacinths 1/6 and 2/-.

Big consignments of Mistleto were disposed of up to 10/- per stone, but reacted to 8/-. Holly, carrying berries in abundance, realised from 2/- to 6/ per stone, and 2/6 to 3/- per box, and Christmas trees found a ready sale at 2/- to 4/- for small, and 6/ to 8/- for large specimens.

Some salesmen reported good business in the fruit market, and others experienced a quiet trading. Imports of Apples continue to be heavy with large stocks in store Up to last week the shipments into the Clyde from America were approximately 320,238 barrels, and 337,856 cases. Closing prices were as follow: Canadian Greening, 32/- to 36/- per barrel; King, 33/- to 38/-; Nova Scotia King, 28/- to 32/-; Baldwin, 22/- to 28/-; Wagner, 23/- to 28/-; Ribston Pippins, 18/- to 25/-; Virginia Newtown Pippin, 42/-; Yorks, 20/- to 26/-; Winesops and Ben Davis, 22/- to 28; British Columbia Jonathan, 12/- to 14/6 per case; Oregon Spitzberger, 13/- to 14/6; Grimes Eveden, 11/6 to 13/-; Winter Banana, 13/- to 15/-; Delicious, 14/- to 16/6; Rome Beauty, 12/- to 13/-. Valencia Oranges are early this year, and since the season began a few weeks ago, 86,821 boxes have been landed, exclusive of 10,939 cases of Mandarins. Prices (300) 17/-, (360) 15/-, (240) 18/-, Jaffas, 14/-, Sunkist, 32/- to 34/-, Jamaica, 13/- to 14/-. Mandarins 1/5 per box, (55), 1/6 (60), and 1/9 (65). Grapes met a steady demand, Colmars—English sell at 2/6 to 3/6 per lb., and Scotch at 2/6 to 3/9; English Muscats 3/- to 5/- per lb., and Almeria 20 to 33/- per barrel. A few Scotch Tomatos averaged 1/- and 1/1 per lb.

Stanford Library
JUL 21 1924

SUPPLEMENT PLATE: Rhododendron Nuttallii.

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

No 4358

No. 1958. Vol. LXXVI. {THIRD SERIES} SATURDAY, JULY 5, 1924. Registered as a Newspaper. (with Supplement) PRICE 6d. POST FREE 7d.

SUBSCRIPTIONS—Inland or Foreign 30/- per annum, post free. *Entered at New York Post Office as second-class matter.*

Postal Address—5, Tavistock Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

NEVER GROW MILDEW.

NOT to prevent mildew is to grow it deliberately. Apples, Gooseberries, Roses, Vines, etc., should be sprayed with Richards' Ammonium Polysulphide, which, combining all the active properties of sulphur, renders fungus life impossible. Very little stain. From Nurserymen, Seedsmen and Florists.

RICHARDS'
AMMONIUM POLYSULPHIDE.

Manufacturers—G. H. RICHARDS, LTD.
234, Borough High Street, S.E. 1.

PERPETUAL-FLOWERING CARNATIONS for the greenhouse and the Garden; catalogue free on application. — C. ENGELMANN, Carnation Grower, Saffron Walden, Essex.

WATERER'S FOR THE BEST IN PERENNIAL IRISES.

Stock over 500,000 sturdy plants in the best and newest varieties. Special catalogue of reduced prices on application.—JOHN WATERER, SONS, & CRISP, LTD., The Nurseries, Twyford, Berks.

LAXTONS' STRAWBERRIES, including **the New "Majestic," 1924; Omega, "Abundance," and "The Duke." Also all the old favourites, in pots and open ground runners.—Full Illustrated Lists gratis.—Order early from LAXTON BROTHERS, Nurseries, Bedford.**

BARR'S SEEDS FOR JULY SOWING.

HARDY PERENNIALS and Alpines for the Flower and Rock Garden and the most suitable Vegetable Seeds for summer sowing Finest selected strains and tested growth. Special lists free.—
BARR & SONS, 11 12, 13 King Street,
Covent Garden, London, W.C. 2.

HARDY PHLOXES

IN all the new and most brilliant shades of colour. List now ready.

GUNN & SONS, Olton, Warwickshire.

A COPY of "LAWNS AND THEIR UPKEEP" **forwarded free on application to JAMES MACDONALD, Grass Specialist, Harpenden.**

DOBBIE'S 1924 PLANT CATALOGUE.— **Free by Post. At Wembley we have an interesting quarter-acre Flower Garden and a Miniature Flower Show.—DOBBIE & CO., LTD., Edinburgh.**

WM. DUNCAN TUCKER AND SONS, LTD., Lawrence Road, South Tottenham, N. 15. Conservatories, Winter Gardens, Vineries, Peach-houses, Portable Buildings, etc.

ORDER EARLY, RECEIVE EARLY, FLOWER EARLY.

—BULBS prepared for Xmas-flowering, and before. Nothing happening without our control, we hope to begin sending out about the 21st inst. In Cynthella (or Miniature) Hyacinths there is none prettier than our Purity (pure white), Pink Beauty, Brillante (crimson-scarlet), Celeste (bright blue), Blue King, Christine (yellow). These varieties we offer also in prepared specimen-flowering bulbs. In Single Tulips we offer 10 of the best "forcers" in prepared bulbs. New Catalogue (enlarged) ready about the end of July, and will be promptly posted to every customer. To non-customers not already on our posting list we will welcome the opportunity of sending a copy. It will be quite free.

DICKSON & ROBINSON, MANCHESTER,
The King's Seedsmen.

WHAT OUR ADVERTISERS ARE SAYING.

FROM a grateful gardener :—"Sir, I have much pleasure in informing you that I have obtained the situation I was seeking (Head Working Gardener) by the ONE ADVERTISEMENT inserted in your columns. Thanks to the GARDENERS' CHRONICLE, I am suited."

THE KELWAY COLOUR BORDER

IS planned for continuity of bloom as well as colour effect. Your garden is of enduring beauty from early Spring to late Autumn and so continues for several years as a result of the minimum of cultivation, expense, and attention.

These Colour Borders have evolved from many years of experience, and clients get the advantage of securing, amongst other subjects, the well-renowned Kelway Specialities in Hardy Plants.

Send dimensions of space to be filled, and the effect required, stating aspect and soil and asking any questions. We are only too pleased to advise.

WRITE NOW to the inventors of Colour Borders.—

KELWAY & SON, The Royal Horticulturists,
LANGPORT.

SUTTON'S CABBAGES

The Best Varieties for Spring Cutting.

SUTTON'S HARBINGER
The earliest Spring Cabbage in cultivation.
Per packet, 1/- and 1/6

SUTTON'S APRIL
Has an unequalled reputation for freedom from tendency to "bolt."
Per packet, 1/- and 1/6

SUTTON'S FLOWER OF SPRING
The most reliable Cabbage for the general Spring crop.
Per packet, 1/-; ounce, 1/6

"Your Harbinger and Flower of Spring Cabbages did extremely well this Spring. I had 5,000 heads, which I started to cut on March 24th, and the crop was all sold before anyone else had Cabbage ready."—Mr. P. H. Hartley, Moor End.

SUTTON & SONS, The King's Seedsmen

☛ **READING.** ☚

BRITAIN'S GREAT CABBAGE.

WEBBS' . . . .
EMPEROR CABBAGE

(For July and August Sowing)

Earliest and best in cultivation. Free from tendency to 'bolt.' Awarded thousands of Prizes.

6d. and 1/- per pkt.; 1/9 per ounce.

"I have grown Webbs' Emperor Cabbage in thousands the last three years, and cannot wish for better, cutting early and never troubled with bolting."—Mr. J. F. Brown, Lavenham.

"Webbs' Emperor Cabbage is the earliest and best I have had in gardening experience of over 30 years."—Mr. P. Monson, Port William.

List of Vegetable and Flower Seeds for Summer Sowing—Post free.

WEBB & SONS, Ltd., The King's Seedsmen
STOURBRIDGE.

JAMES GRAY, LTD., Builders of Conservatories, Greenhouses, etc., and Heating Engineers, 20Q, Danvers Street, Chelsea, London, S.W.3. Wire GRAY, Kensington 90. Telephones: Kensington 90 & 91.

SANDERS, ORCHID GROWERS,
St. Albans.

PLANT now for flowering this Autumn. Crocus Zonatus, 1/6, 2/- per doz.; 10/6, 12/6 per 100; 100/-, 120/-, per 1000. Special list of above and other Autumn-flowering Croci free on application.—T. SMITH, Daisy Hill Nursery, Newry.

SALES BY AUCTION.

Wednesday Next, July 9th.

Sale of

PALMS IN VARIETY, BAY TREES,

and other plants for decoration.

MESSRS. PROTHEROE & MORRIS will sell as above at their

AUCTION ROOMS,

67 & 68, CHEAPSIDE LONDON, E.C. 2.

At 3 o'clock.

On View morning of Sale. Catalogues on application.

THE "OAKS" COLLECTION OF ORCHIDS.

IMPORTANT SALE

of this very valuable Collection, comprising large numbers of the

FINEST MODERN HYBRIDS,

a very large proportion of which are certificated plants of great merit. The sale comprises about

1,100 PLANTS,

including many exceptionally fine ODONTOGLOSSUMS, some of the best CATTLEYAS, LÆLIO- AND BRASSO - CATTLEYAS, CYMBIDIUMS, CYPRIPEDIUMS and DENDROBIUMS.

MESSRS. PROTHEROE & MORRIS will sell the above by auction at their

CENTRAL SALE ROOMS,

67 & 68, CHEAPSIDE, LONDON, E.C. 2.,

On Friday, July 25th, 1924,

Commencing at ONE o'clock.

Catalogues on application.

BUSINESSES FOR SALE.

AUBREY & CO., Nurserymen's Agents, 96, Newgate Street, London, E.C. 1., offer Nursery to let near Richmond, S.W., comprising about an acre with 800 ft. run of glass. Rent £80 on Lease. Ingoing for stock, etc., £350.

AUBREY & CO. offer Compact Market Nursery in growing residential district, Surrey (near London), about an acre with Comfortable Dwelling House, 7 rooms, and 12 well-built Glasshouses, totalling 900 ft. run, well-heated and in good order. Price, Freehold complete with stock, £2,225.

AUBREY & CO. offer Freehold Market Garden and Fruit Farm in Worcestershire, comprising 10¼ acres fully planted top Fruit, Vegetables, etc., good Dwelling House of 10 Rooms, with substantial Outbuildings; also Picturesque Elizabethan Cottage of 9 rooms, with large brick Outbuildings. Will sell as a whole or would divide.

AUBREY & CO., offer an excellent up-to-date Nursery near Portsmouth, comprising two acres with spacious well-built, gentleman's Bungalow; also good Garage and Outbuildings, and 900 ft. run of modern Glasshouses; Electric Light from own plant; abundant water supply. Fully stocked and in first-class order. Price Freehold £3,500.

GOODWILL and Stock of my Cacti Business. This was established 1890 and is the best known in Great Britain, as I have been a regular exhibitor at the principal English and Scottish shows. Exceptional opportunity for enthusiastic amateur. Goodwill and stock of over 1,000 plants, £125.—ELLISON, West Bromwich.

PROPERTY TO LET.

TO MARKET GARDENERS, NURSERYMEN, RETIRED GARDENERS, Etc.

THE Marquess of Anglesey, having ceased to live at Beau Desert, is willing to LET, as from 10th October, 1924:

THE NEW KITCHEN GARDENS

AND

THE OLD KITCHEN GARDENS

situate inside the Park at Beau Desert, about 5 miles from Lichfield and Rugeley (L. M. & S. Rly.) and 3 miles from Hednesford and Chasetown.

The surrounding district is a Colliery one, and therefore a good Market for Garden Produce.

The area of the NEW GARDENS (which are walled in) is about 5 acres, and there are over 30,000 square feet of Glass, together with Lean-to Pits, Frames, Mushroom House, Open Shed and other capacious offices and conveniences, including Boilers, Fuel Stores, etc. All modern and in good repair,

Fruit Trees and Bushes in the open.

Supply of water laid on.

Housing accommodation for labour by arrangement.

The OLD GARDENS, roundly 4 acres, distant about a mile from the New Gardens, are walled in. There is no glass; small quantity of Building. Brook runs through.

Ingoing Valuation.

Apply—Messrs. LOFTS & WARNER,

130, Mount Street, Berkeley Square, London, W. 1.

TO LET.—Gentleman's large Gardens, with good modern glass, well stocked, and about 4 acres well fruited, all produce sold locally; good dwelling house. G.G.F., Box 13, 5, Tavistock Street, Covent Garden, W.C. 2.

BUSINESS CARD.

PROTHEROE & MORRIS, HORTICULTURAL MARKET GARDEN AND ESTATE AUCTIONEERS AND VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

NOTICES.

EVERY PROFESSIONAL GARDENER should join the BRITISH GARDENERS' ASSOCIATION (Revived 1924).—Full particulars from J. WEATHERS, Park View, Isleworth.

MUNICIPAL AND PUBLIC. TENDER.

BOROUGH OF BRIDLINGTON.

WATER BALLAST ROLLER.

THE COUNCIL invite orders for the supply of a second-hand Water Ballast Roller for use at the Recreation Ground. Further particulars may be obtained from the Gardens Superintendent, 93, Quay Road, Bridlington. Sealed Tenders endorsed "Roller" must be delivered at my office not later than noon on Saturday, 12th July, 1924.

GEORGE MELVIN,
Town Clerk.

Town Hall,
Bridlington,
30th June, 1924.

EXHIBITIONS.

Royal Welsh Agricultural Society.

SHOW at BRIDGEND.

July 23rd, 24th & 25th, 1924.

Classes for Cut Flowers, Shrubs, Roses, Sweet Peas, Fruit and Vegetables. Entries close July 12th.

Judges: Mr. TOM JONES, Penybryn, Ruabon.
Mr. A. HAYNES, Wynnstay, Ruabon.

Schedules and Entry Form from
WALTER WILLIAMS (Acting Secretary),
Rotunda Buildings, BRIDGEND.

Brighton, Hove and Sussex Horticultural Society.

GREAT

ROSE, SWEET PEA & CARNATION SHOW

DOME AND CORN EXCHANGE

Wednesday & Thursday, July 9th & 10th.

The Leading South of England Horticultural Exhibition.

Band of H.M. SCOTS GUARDS (30 performers)
Each Day at 3 and 7.30 p.m.

For Special Cheap Fares see Handbills at Railway Stations

PLANTS, &c., FOR SALE.

SEEDS for SUMMER SOWING.—Ellison's Pedigree strains. Ferns, choice and rare; Cacti, 6/-, 9/-, 12/- and 18/- dozen, carriage paid; G. & A. Fertiliser, 5/- cwt. List free. — ELLISON'S, West Bromwich.

FERNS ! CALADIUMS ! !—Begonias, Palms, Crotons, Dracaenas, Gloxinias, Hydrangeas, Geraniums, Ericas, Lilies, Ferns and How to Grow Them, by J. E. Smith, 3/6 post free. — SMITH, London Fern Nurseries, London, S.W. 9.

100,000 LARGE GARDEN FERNS, 30/- 100, variety; wanted, 1,000 large Aspidistras for dividing. Catalogues free.—SMITH, Fernery, London, S.W. 9.

HIMALAYAN, Chinese and other Rhododendrons on their own roots. Shrubs, Alpines and border plants, Aquatics, Lilies, etc. Write for Lists.—G. REUTHE, Keston, Kent.

BEGONIAS. — Strong-rooted cuttings Gloire de Lorraine, Rothschild, Turnford Hall, 3/ doz., 11/- 50, 21/- 100; The King, 4/- doz., 15/- 50, 28/- 100. Carriage paid for cash with order.—MANAGER, Dorset Nurseries, Blandford.

COLCHICUMS (Meadow Saffrons), Crocus, Autumn-flowering and other species for July planting. List on application.—T. SMITH, Daisy Hill Nursery, Newry.

PENTSTEMONS, Southgate Gem and Newbury Gem, strong plants carefully packed, 12, 4/6; 50, 14/6.—MILNE, South Darley, Matlock.

CHEIRANTHUS ALLIONI, sturdy well-grown seedlings for transplanting; carefully packed, 2/6 100.—MILNE, South Darley, Matlock.

PLANTS, &c., WANTED.

CUPRESSUS McNABIANA.—Wanted good plants of Cupressus McNabiana.—Address, D. MARQUIS, Inveresk Gate, Musselburgh, N.B.

WANTED.—Japanese Dwarf Trees in pots. Retinispora, Taxus, Thuya, etc., also Maples and other deciduous species. Must be well grown specimens.—COLLECTOR, Box 4, 5, Tavistock Street, Covent Garden, W.C. 2.

MISCELLANEOUS.

IRON AND WIRE FENCING for Gardens, Tree Guards, Gates, Arches, Espaliers, Rose Stakes, and Ornamental Garden Iron and Wire Work of every description; send for illustrated catalogue. Also Kennel Railing and Poultry Fencing. Ask for separate lists.—BOULTON & PAUL, LTD., Norwich.

BIRDS' BATHS, Sundials, Vases, Statuary, Birds' Nesting Boxes, etc. — Catalogue (No. 3) free.—MOORTON, 60, Buckingham Palace Road, S.W. 1.

SEWAGE DISPOSAL for country houses, factories, farms, etc.; no emptying of cesspools; no solids; no open filter beds; everything underground and automatic; a perfect fertiliser obtainable.—WILLIAM BEATTIE, 9, Lower Grosvenor Place, Westminster.

STONE PAVING.—Crazy and rectangular York Garden Paving, Copings, Steps, etc., Grit and other Rocks for Rock Gardens; Flat Stone Rubble for "Dry" Walls. Nottingham Marl. Large or small quantities carriage paid to any Railway Station in England.—HODSON & SONS, LTD., Castlegate, Nottingham.

SELECTED GREY WESTMORELAND Weathered and Waterworn Mountain Limestone Rockery. The finest Rockery Stone; also York Stone Garden Paving. — HERBERT BROOK, High Road, Whetstone, N. 20; and Lightcliffe, Yorkshire.

ROCKERY (Westmorland). — Waterworn Limestone for sale in 6-ton lots and upwards; any quantity.—For prices, etc., write JOHN WARDLEY & SONS, Slack Head, Milnthorpe.

GENUINE CUMBERLAND TURF, Red Shale for Hard Tennis Courts; Weathered Limestone Rockery, Crazy Paving and Stone for garden making; White Spar. State requirements.—KERSHAW'S LTD., Garden Makers for 50 years, Keighley.

NORTHAMPTONSHIRE LOAM CO., 18, Horsemarket, Kettering.—Finest Loam from richest Northamptonshire Ironstone land; splendid colour and fibre; 2/6 for f.o.r. sample 2 cwt. bag; truck loads considerably cheaper.

PEAT MOULD for Rhododendron and Nursery work, 5/- bag, 25/- ton, in truckloads on rail.—WALKER, Pinewoods, Camberley.

GRAVEL (Surrey), binding without stickiness, for paths and roads, 12/6 per ton on rail in truck.—WALKER, Pinewoods, Camberley, Surrey.

COAL AND COKE, greenhouse Welsh anthracite from 27/6 ton pit, SemAnthracite (registered), 19/6 ton pit; Coke, 25/6 ovens; in sizes suitable for any boilers; trucks any station.—BUCKLE COLLIERY CO., 59, Hales, Cheltenham.

GARDEN NETTING.—Best Selected, small Mesh, Tanned, 25 x 2 yds., 4/-; or 4 yds., 8/-; or 8 yds., 16/-; finer quality, same sizes, 2/8, 5/3, and 10/6, carriage paid.—STRAWBERRY NETTING CO. Office: 5, Suffolk Terrace, Lowestoft.

VEGETABLE GROWING. "A Vegetable Grower's Handbook," by Fanny Bennett and E. S. Rohde.—"A sound Practical Guide," says the Field. Price 2/6 net. Post free 2/9. — MARTIN HOPKINSON & CO., LTD., 14, Henrietta Street, London, W.C. 2, or all Booksellers.

FORM OF SUBSCRIPTION TO THE GARDENERS' CHRONICLE

From

Name ……………………………

Address ……………………………

……………………………19

Please send me **The Gardeners' Chronicle**

for …………*Months, commencing*

for *enclose P.O.* ……………

Please note that all copies sent direct from this office must be paid for in advance.

12 Months, 30s.; 6 Months, 15s., 3 Months, 7s. 6d.; Post Free.

Receipts for less than three months' subscription will not be sent unless specially asked for.

All remittances to be made payable to the GARDENERS' CHRONICLE, Ltd., and sent to 5, TAVISTOCK STREET, COVENT GARDEN LONDON, W.C. 2.

CALENDAR OF GARDEN OPERATIONS.

The Calendar of Garden Operations
2/6
The Gardeners' Chronicle 5 Tavistock Street Covent Garden W.C.2

Price **2/11** *post free.*

SINCE the new edition of this book was published it has deservedly regained and surpassed its former popularity, and is now acknowledged to be far and away the best book for the small gardener and allotment holder. There is no difficulty in finding any particular operation required, for the book is divided into twelve months, showing what has to be done in the garden each month. Besides this, there is an excellent index, a large number of useful illustrations, and many special articles of the greatest help and value.

GARDENERS' CHRONICLE, Ltd., 5, Tavistock Street, Covent Garden, W.C. 2.

Telephone Nos.
50 Haywards Heath and 2397 Wembley.

Telegraphic and Cable Address:
"Charlesworths, Haywards Heath."

THE
BRITISH EMPIRE
EXHIBITION
WEMBLEY
APRIL - OCTOBER, 1924

THE
ONLY EXHIBITORS OF
ORCHIDS
Horticultural Section. Site 24.

CHARLESWORTH & Co. Ltd. HAYWARDS HEATH, Sussex.

CORRY'S
WHITE FLY
DEATH

The Fumigant with "A Name." Non-poisonous.
Famous the Length and Breadth of the Land.
There has never been any need to alter this Fumigant.
Be satisfied with the Best, it is the Cheapest in the end.
Beware of imitations they are often misleading.
Commended by the Royal Horticultural Society.
Price Cubic ft., 1,000, 10d.; 2,000, 1/3; 4,000, 2/-; 8,000, 3/6; 16,000, 6/-; 32,000, 10/6; 64,000, 19/-.

CORRY'S
RED SPIDER
DEATH
REGISTERED NO 446881

Tested on a large scale and found entirely successful.
Kills Red Spider as effectively as Corry's White Fly Death kills White Fly. Non-poisonous.
For Peaches, Carnations, Vines and all Plants.

½ pt.	1 pt.	1 qt.	½ gln.	1 gln.	2 glns.	5 glns.	10 glns.
2/-	3/6	6/-	12/-	19/-	36/-	78/-	150/-

½, 1 and 2 gln. sizes packed in our Free Watering Cans.

A GREAT DISCOVERY.
Corry's Safe and Sure Wasp Nest Destroyer
Non-poisonous, yet far better than Cyanide.

2	6	20	40 Nests
7d.	1/4	3/6	6/6

From Nurserymen, Seedsmen and Florists.
CORRY & CO., Ltd., Shad Thames, London, S.E. 1.

CRETS
The Pots that Drain
PETER BAILEY & SONS, Ltd.,
Heaton Mersey Pottery,
Nr. Manchester.

STARTLING REDUCTIONS. **SALE** CARRIAGE PAID.

Greenhouses from	Poultry Houses	Store Huts
£6 18 6	from 32/6	from £3 17 6

Large Illustrated Catalogue No. 107 post free.
T. BATH & CO., Ltd., Savoy St., London, W.C.

PARSONS. OXFORD RD. READING.

CONSERVATORIES,
GREENHOUSES, PITS,
HEATING APPARATUS.

For GARDEN and SPORTS NETTING
Send to **A. CRIPPS & SONS**
22-24 Pear Tree Road, DERBY.
Samples by post.

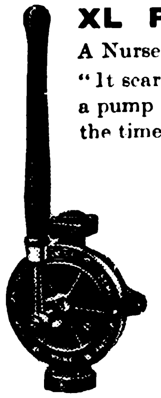
STOVE & GREENHOUSE PLANTS
Aralias, Crotons, Caladiums, Dracænas, etc., all kinds of Foliage, Flowering & Climbing Plants
The largest and most complete collection in the Trade.
L. R. RUSSELL, LTD.,
Richmond Nurseries, Richmond, Surrey.

The Classic of the Rock Garden
THE
ENGLISH ROCK GARDEN
by the late
REGINALD FARRER.

This classical work, which is and will remain for many years the best authority on the subject of Alpine gardening, was completed shortly before the death of its brilliant author while on his last plant-collecting expedition. It comprises two freely illustrated volumes crammed from cover to cover with deeply interesting and exceedingly valuable information.

Price £3 3s.
postage extra 1/3, *from*
GARDENERS' CHRONICLE, LTD.,
5, Tavistock Street, London, W.C.2.

XL PUMPS FOR THE GARDEN



XL PUMP ONLY
A Nurseryman of Hampton writes: "It scarcely seems possible so small a pump can pump so much water in the time."

Size	Galls. per hour	Price
½ in.	240	18/-
¾ in.	400	20/6
1 in.	450	24/6
1¼ in.	570	29/6
1¼ in.	870	36/9
1½ in.	960	41/-

XL PACTUM OUTFIT
With loose tubular Handle. Width over Wheels 17 in. Length without Handle 22 in.
With ½ in. Pump and Unions 70/-
With ¾ in. ditto 75/-

WATER BARROW & XL PUMP
Outfit.—Size ½ in. Semi-Rotary Pump, Air Vessel, Suction Pipe with Strainer, and short length of Delivery Hose, Brass Branch, Rose and Tap.

10 gall., 98/-
15 ,, 107/9
20 ,, 118/-
30 ,, 131/6

FROM STOCK, LIST FREE.

CHAS. P. KINNELL & CO., LTD., 65, 65A, SOUTHWARK STREET, LONDON, S.E. 1.

Present-day Gardening Series.

Each Volume is written by an Expert, and Illustrated with Eight Plates reproduced from Colour Photographs by T. ERNEST WALTHAM, F.R.H.S.

ROOT AND STEM VEGETABLES
PRESENT-DAY GARDENING

DAFFODILS. By the Rev. J. JACOB, Chairman of Committee of the Midland Daffodil Society. With preface by the late Rev. W. WILKS, M.A.

DAHLIAS. By the late GEORGE GORDON, V.M.H.

LILIES. By A. GROVE, F.L.S., with preface by the late H. J. ELWES, F.R.S.

ROOT and STEM VEGETABLES. By the late ALEX DEAN, V.M.H.

TULIPS. By the Rev. J. JACOB.

Each Volume 3/- post free to be obtained from

GARDENERS' CHRONICLE, Ltd., 5, Tavistock Street, Covent Garden, London, W.C.2.

FERNS AND FERN CULTURE
PRICE ONE SHILLING

FERNS AND FERN CULTURE.

By J. Birkenhead

Revised by F. Parsons.

Price **1/4** *post free.*

EVERYONE admires a graceful, waving Fern, whether it is growing wild in a Devonshire Lane, adorning the rock garden, or ornamenting the dining table at home. Ferns are not difficult to manage; once they are given suitable conditions, they continue to flourish with very little attention, and they will grow in shaded gardens where it is not easy to induce flowers to do well. FERNS AND FERN CULTURE tells you all about them—their habits, their requirements, how to deal with them when attacked by insects or disease. It is a small book, but the price is still smaller. Send for your copy at once to—

GARDENERS' CHRONICLE, Ltd., 5, Tavistock Street, Covent Garden, W.C. 2.

Abol

Non-poisonous

Insecticide & Fungicide

For Green Fly etc. and Mildew

A sure-kill for Insect Pests and unequalled for Mildew on Roses and other plants. Also imparts health to the plant and refreshes the foliage. Safe to use on all flowers, fruits and vegetables.

½ pt. 1/4, pt. 2/2, qt. 3/4, ½ gall 5/3, gall. 9/6.

Abol Patent Syringes

Specially recommended by

The National Rose Society

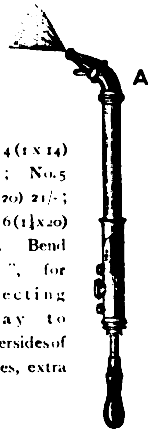
Give a perfect spray which may be varied from fine to medium or coarse. Of best quality material and workmanship. Last a lifetime.

A working model of an Abol Patent Syringe was supplied to H.M. Queen's Doll's House.

Of Nurserymen, Seedsmen, Florists, Ironmongers, Chemists and Stores. Sole proprs. and mnfrs.

Abol Limited, 10, Beltring, Paddock Wood, Kent.

Write for Guide to Garden Pests, gratis and free.



No. 4 (1 x 14) 16/4; No. 5 (1 x 20) 21/-; No. 6 (1¼ x 20) 26/-. Bend "A", for directing spray to undersides of leaves, extra 1/6.

Abol

White Fly Compound

A safe, simple and effective remedy for Snow Fly on Tomatoes, Cucumbers and many other plants. No apparatus. Just pour the Compound down the centre path of the house at the rate of 2½ fluid ozs. per 1,000 cubic ft.

Of Nurserymen, Seedsmen, etc.

Sizes	¼ pt.	½ pt.	pt.
Cubic ft.	2,000	4,000	8,000
Fluid ozs.	5	10	20
Prices	1/-	1/9	3/-
Postage	6d.	6d.	9d.
Sizes	qt.	½ gall.	gall.
Cubic ft.	16,000	32,000	64,000
Fluid ozs.	40	80	160
Prices	5/-	8/-	15/-
Postage	9d.	1/3	2/6

Write for descriptive folder.

Abol
White Fly
Compound

MAKE YOUR OWN

FARMYARD MANURE

A little ADCO Accelerator mixed with your green garden refuse, lawn cuttings, dead leaves, pea and bean haulm, etc., will provide you with a first-class fertiliser equal to the best farmyard manure. ADCO treats 40 times its own weight of fresh refuse, converting it into rich plant food, invaluable for increasing crops and invigorating all your plant life.

56lbs. of ADCO make 1 ton

28lbs. 4/6, 56lbs. 8/-, 1 cwt. 15/-

Carriage paid; cash with order.

If your local dealer does not stock ADCO, send direct for a trial bag.

Please mention nearest Goods station.

Agricultural Developments Co. (Pyrford), Ltd.
60, Harpenden Herts.

ADCO

Sutton's of Reading.

Watch your Lawns for Clover

Clover is now making its appearance in Lawns and will spread rapidly unless a careful watch is kept. To check it there is no better preparation than

Sutton's Anti-Clover Mixture

Occasional dressings should be given in dry weather at the rate of 2 oz. per square yard. Not only is the Clover effectively checked but the mixture also acts as a stimulant to the grass.

Tins each 1/6; 7 lbs. 2/9; 14 lbs. 5/-; 28 lbs. 9/- 56 lbs. 17/-; 112 lbs. 30/-.

Advice gladly given on any matters connected with the upkeep of Turf.

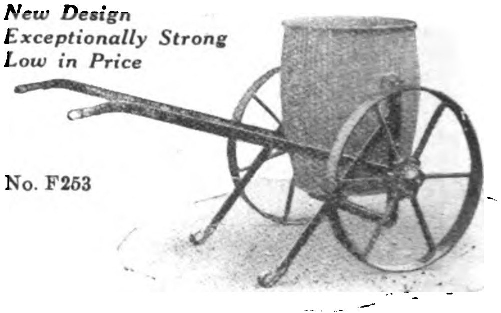
Address: Dept. "S.A.D."

SUTTON & SONS
The King's Seedsmen
Reading.

For Lawn Grass Seeds, Fertilisers, etc.

An Ideal WATER BARROW For Gardens

New Design
Exceptionally Strong
Low in Price



The tank is made of Corrugated Steel Sheets, galvanised, hence its strength. The barrow is made of flat Iron Frame with 22" dia. wheels, 2" tyres.

CASH PRICE.

	£	s.	d.
Made only in one size of 18 gallon capacity at	**£2**	**10**	**0**
Extra Tank		**17**	**6**

Other designs from £2 13 0 (12 gallon).

Obtainable at any Ironmonger.

Carriage Paid on orders of £6 value to principal railway stations in England and Wales.

Particulars from Dept. F.P./G.C.

Boulton & Paul Ltd.
Telegrams BOULTON NORWICH **NORWICH** Telephone NORWICH [illegible]
LONDON OFFICE 135-137, QUEEN VICTORIA ST. E.C.
Telegrams Boutique Cent London Telephone 4642 Cent

MARKETS.

COVENT GARDEN, Tuesday, July 1, 1924.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated.)

	s. d. s. d.
Adiantum cuneatum per doz. ...	10 0 18 0
—elegans	10 0 12 0
Aralia Sieboldii ...	9 0–10 0
Araucarias, per doz.	30 0–42 0
Asparagus plumosus	12 0–15 0
—Sprengeri ...	12 0–18 0
Aspidistra, green	48 0 72 0
Asplenium, per doz.	12 0–18 0
—32's	24 0–30 0
—nidus	12 0–15 0
Cacti, per tray, —12's, 15's ...	5 0– 7 0
Crassules, 48's, per doz.	21 0–24 0
Crotons, per doz.	30 0–42 0
Cyrtomium ...	10 0–15 0
Erica magnifica, per doz. ...	24 0–36 0
Hydrangeas, white, 48's, per doz. ...	24 0–30 0
—blue, 48's, per doz.	30 0–42 0
Hydrangeas, pink, 48's, per doz. ...	24 0 36 0
Marguerites, white, 48's, per doz. ...	15 0 18 0
Mignonette, 48's, per doz. ...	10 0 12 0
Nephrolepis, in variety	12 0–18 0
—32's	24 0 36 0
Palms, Kentia ...	24 0 30 0
—60's	15 0–18 0
—Cocos	24 0–36 0
Pteris, in variety	12 0–21 0
—large 60's ...	5 0– 6 0
—small	4 0– 4 6
—72's, per tray of 15's	3 6 4 0
Rhodanthe, pink and white, per doz.	9 0–12 0
Roses, Polyantha, 48's, per doz. ...	18 0–24 0
Spiraeas, pink ...	21 0–27 0
Stocks, white, 48's, per doz. ...	12 0–15 0
—coloured, 48's, per doz. ...	18 0 24 0
Verbena, Miss Wilmott, per doz.	12 0–15 0

Cut Flowers, etc. Average Wholesale Prices.

	s. d. s. d.
Adiantum decorum, doz. bun.	15 0–18 0
—cuneatum, per doz. bun. ...	12 0–15 0
Asparagus plumosus, per bun.	
long trails, 6's	4 0– 5 0
med. sprays ...	2 6– 3 6
short „ ...	1 0– 1 6
—Sprengeri, per bun.	
long sprays ...	3 0– 3 6
med. „ ...	2 0– 2 6
short „ ...	1 0– 1 3
Carnations, per doz. blooms ...	1 0– 2 6
Chrysanthemum maximum, per doz. bun. ...	2 6– 3 6
—Shasta Daisy, per doz. bun. ...	3 0– 4 0
Coreopsis, per doz. bun.	3 0– 3 6
Cornflowers, per doz. bun. ...	1 0– 1 6
Croton leaves, var., doz. bun.	2 0– 2 6
Delphinium, per doz. bun. ...	4 0– 9 0
Fern, French, per doz. bun. ...	1 0– 1 3
Gaillardia, per doz. bun.	3 0– 4 0
Gardenias, per box, 12's	4 0 6 0
Gladiolus, Peach Blossom, per doz. bun. ...	9 0 12 0
—Blushing Bride, per doz. bun. ...	9 0–12 0
—The Bride, per doz. bun. ...	10 0–15 0
—salmon, per doz. spikes	2 0– 3 0
—scarlet, per doz. spikes	3 0– 3 6
—pink, per doz. spikes	2 6– 3 0
—white, per doz. spikes	3 0– 3 6
Gypsophila elegans, per doz. bun. ...	3 0 5 0
Iceland Poppies, per doz. bun. ...	2 0– 3 0
Roses, Richmond, per doz.... ...	1 6 2 6
—Frau Karl Druschki, per doz.	1 0– 2 6
—Mme. Butterfly, per doz. blooms	2 0 3 0
Roses, White, per doz.	2 0– 3 0
—Columbia, per doz.	1 6– 3 0
—Ophelia, per doz.	1 6 2 6
—Sunburst, per doz.	2 0– 2 6
—Mme. Abel Chatenay	1 6– 2 6
Statice, mauve ...	9 0–12 0
Stephanotis, per 72 pips	3 0– 4 0
Sweet Peas, per doz. bun. ...	4 0 10 0
Heather, white, per doz. bun. ...	9 0–12 0
Lilium lancifolium albums, per doz. blooms... ...	3 0– 4 0
Lilium longiflorum long, per doz....	2 0 3 0
short „ „ ...	2 0– 2 6
—rubrum long, per doz. blooms ...	2 6– 3 0
—short „ „ ...	3 0– 3 6
Lily of the Valley, per doz. bun....	30 0–36 0
Nigella, per doz. bun	3 0 4 0
Orchids, per doz. —Cattleyas ...	13 0 24 0
Paeonies, scented, 6's, per doz. bun.	9 0–12 0
Pinks, white, per doz. bun. ...	1 6 2 0
Pelargonium, white, per doz. bunch	8 0 9 0
Smilax, per doz. trails	4 0 5 0
Scabiosa caucasica, per doz. bun. ...	4 0 5 0
Stock, double white, per doz. bun.	6 0 12 0
Sweet Sultan, mauve, per doz. bun.	6 0– 9 0
—white, per doz. bun.	6 0– 9 0
Violas, per doz. bun.	2 6– 3 0

REMARKS.—Large supplies continue to arrive, especially outdoor flowers, and prices have been further reduced. Certain subjects have been so plentiful as to make it impossible to clear them. Cornflowers, Delphiniums, White Pinks, including His Majesty; double-white and coloured Stocks are all arriving in excellent condition and large quantities have been sold. The quantities of Carnations also exceed the present demand. Towards last week end Roses were a better trade and supplies were a trifle shorter this morning. Paeonies and Spanish Irises are practically over for this season. There are larger offerings of Coreopsis, Gaillardias, Sweet Sultan, Scabiosa caucasica and Statice sinuata. Lilium longiflorum has been a very erratic trade during the past week, but only for one or two mornings has the market been cleared of these flowers before closing time. L. lancifolium album is now on offer; L. rubrum is cheaper than it has been for some considerable time past. Large-flowered Gladioli are arriving in excellent condition and a fine selection of colours is available. Sweet Peas also are very fine in quality this year. Amongst choice white blooms Gardenias are more plentiful and very fine in quality; a few Tuberoses are also on sale. Stephanotis and Lapagerias are also more plentiful. There has been no particular shortage of any subject during the past week and all stands are well filled each morning.

Fruit: Average Wholesale Prices.

	s. d. s. d.
Apples—	
New Zealand Sturmer Pippin	20 0–22 0
—others	16 0–18 0
Tasmanian ...	18 0–20 0
—others	14 0–16 0
Australasian Pears, per tray... ...	7 0–12 0
—Beurré Bosc ...	6 0– 9 0
—Winter Nelis ...	8 0–10 0
Cherries, ½-sieve	6 0–14 0
—Boats	5 0– 8 6
—Boxes	1 3– 2 0
Australian Grapes	22 6–25 0
Bananas, singles	12 0–17 0
Grapes—	
—English Black	
—Gros Colmar ...	2 6– 3 6
Hamburgh, per lb.	2 0– 3 6
—Belgian Black Hamburgh ...	1 9– 3 0
—Muscats ...	2 6– 7 0
Apricots, crates ...	6 0– 8 0
—½ sieves... ...	8 0–10 0
English Cherries—	
—Black... ...	9 0–14 0
—White ...	6 0– 8 0
English Figs, per doz.	3 0–12 0
Belgian Peaches, per doz. ...	4 0– 8 0
English Peaches	6 0–24 0
French Cantaloupe, each ...	10 0–16 0
Gooseberries, ½-sieve	4 0– 5 6
Guernsey Melons	2 6– 6 0
Lemons—	
—Murcia	15 0–20 0
—Messina, box ...	7 0– 9 0
—Case	10 0–12 0
Nectarines ...	12 0–24 0
Oranges, Spanish, per case ...	18 0–30 0
Pines, case ...	17 6–45 0
Red Currants ...	6 0– 7 6
Black Currants ...	8 0–12 0
Raspberries, per lb.	1 6– 2 6
South African Navel	18 0–20 0
—Seedlings ...	16 0–18 0
—Grape Fruit ...	— 30 0
Spanish Plums, per crate ...	9 0–10 0
—½-sieve	9 0–12 0
Strawberries—	
—Southampton, per chip ...	1 3– 2 6
—Kent, per chip	2 0– 4 0
—Pecks	6 0– 7 6

Vegetables: Average Wholesale Prices.

	.d. s. d.
Beans—	
Guernsey ...	1 3 1 9
Worthing ...	1 3– 1 9
Madeira, basket	2 0– 4 0
Beets, cwt. ...	20 0–25 0
Cabbage, per doz.	0 9– 1 0
Carrots, new, per doz. bun. ...	2 0– 3 0
Cauliflower, crates, 24's	10 0–12 0
Cucumber, 3 doz., 3½ doz., 4 doz....	10 0–15 0
English Lettuce, round, per doz.	0 3– 0 9
—long, per doz....	0 6– 1 0
Marrows, doz. ...	3 0– 5 0
Green Artichokes, doz.	1 0– 2 0
Greens, bag ...	1 6– 2 6
Mushrooms, lb. ...	0 6– 2 0
—Outdoor, lb. ...	0 4– 0 8
Mint, doz.... ...	3 0– 4 0
Onions, Valencian, cases ...	10 0–12 0
Parsley, flat bunches ...	2 6– 4 0
Parsnips, cwt. ...	8 0–10 0
Potatos, Guernsey, per bushel ...	6 0– 7 0
—English, cwt. ...	12 0–14 0
—St. Malo, cwt.	11 0–12 0
Radishes—	
Round	1 6– 2 6
—Long	1 0– 1 6
Peas, blue, bushel	4 0– 5 0
—white, bag ...	2 6– 3 0
Spinach, bushel...	5 0– 6 0
Spring Onions, per doz. bun. ...	4 0– 6 0
Tomatos, Canary Island	15 0–16 0
—English, pink and white ...	5 6– 6 6
— —blue	4 0– 5 0
— —white ...	4 6– 5 0
—Guernsey ...	5 6– 6 0
Turnips, new, per doz. bun. ...	3 0– 5 0

REMARKS.—Although Strawberries are claiming most attention just now, other sections report fairly active conditions to which, no doubt, the improved weather contributes largely. Hothouse Grapes, Peaches, Melons and Figs are meeting a good demand. Oranges from Spain and South Africa are a steady trade. Apples from Australia and New Zealand are wanted and selling well. Spanish Apricots are not so plentiful as last week and Plums are moving out freely. English Gooseberries, after being a bad market, are improving in value. English Cherries are selling freely; all black varieties are realising good prices but ordinary white sorts are cheap. Tomatos are very plentiful and realising lower prices. Cucumbers are easier in value and plentiful. Peas are arriving in large quantities from all sources and are very cheap. Mushrooms are plentiful and cheap. French Beans are lower in price owing to competition with Peas. Green vegetables are reasonable and in ample supply.

GLASGOW.

Business was active during the past week, and although supplies were heavy in each section the trade demand was good. The Strawberry season is now at its height and the large quantities coming from Southampton, Wisbech, Cheddar and other fields of production realised good prices. Wisbech fruit ranged from 2/- to 3/6 per 4 lb. chips, and that from Southampton 2/- to 2/9 per 3 lbs. English Gooseberries were very plentiful and were in ready demand at 2½d. per lb. Cherries sold from 12/- to 16/- per half bushel; Apricots, 12/-; French Currants, 4/6 per chip; Belgian Peaches, 4/- to 6/- per box; Dutch Peaches, 8/- per doz.; Australian Pears, 24/- to 26/- per case; Dutch Black Grapes, 2/- per lb. A first consignment of Scotch honey met with keen competition and was disposed of at 4/- per lb.

The warm weather is reflected in the increasing supplies of Tomatos, and prices showed a reduction from those of last week, Scotch grown yielding 10d. to 1/- per lb., English and Guernsey 8d. and 9d. per lb.

Cut flowers were mostly of poor quality, large consignments arriving daily in a heated condition. Values in consequence ruled low and showed little or no recovery from the low lines recorded in the preceding period. Carnations fluctuated between 1/- and 2/- per doz; good Irises, 6d. to 8d., inferior blooms, from 1d. to 3d.; Marguerites, 1/- to 2/-; Gladioli, 4d. to 1/- per bunch; Pyrethrums, 3d. to 6d., and Sweet Peas, 2d. to 9d. per bunch. Roses arrived in hundreds of boxes each day and were absorbed at cheap prices which ranged as follows:—Richmond, 9d. to 1/6; Chatenay, 1/6; Ophelia and Madame Butterfly, 10d. to 1/6; Mrs. H. Stevens, 8d. to 1/6. Paeonies brought from 4d. to 7d. per bunch of six blooms.

Pot Plants continued plentiful and at times exceeded the demand. Pelargoniums ruled from 6/- to 12/- per doz.; Fuchsias 6/- to 9/- per doz.; Marguerites, 5/- to 8/-; and Salvias varied from 1/- to 7/- according to size.

A large business was reported in the vegetable section and average prices were:—Evesham Asparagus, 5/- per bundle; Peas, 7/- to 8/- per pot; Cauliflowers, 5/- doz.; Carrots, 5/- per doz. bunches; Lettuces, 1/6 to 2/-, and specials, 4/6; Cucumbers, 6/-; and Jersey Potatos, 18/- per cwt. Ayrshire Potatos (Epicure) are selling retail at 4d. per lb. Imports from Teneriffe are finished for the season.

SELECT LIST OF BOOKS ON GARDENING.

PRICES QUOTED ARE IN ALL CASES POST FREE TO ANY PART OF GREAT BRITAIN.

Grape Growing for Amateurs. By E. Molyneux. Gives plain instructions for the successful cultivation of indoor grapes, with lists of most suitable varieties. 2s. 4d.

Grape, The Book of the. By H. W. Ward. An excellent manual of practical Grape cultivation, well illustrated. 4s.

Grapes and How to Grow Them. By J. Lansdell. Culture and management in vineries, greenhouse, and in the open air. 4s. 6d.

Greenhouse, The Book of the. By J. C. Tallack. The work of a practical gardener. Illustrated by photographs. 4s.

Greenhouse, The: its Flowers and Management. By H. H. Thomas. Freely illustrated with photographs and sketches. 1s. 9d.

Greenhouse Management for Amateurs. By W. J. May. The best greenhouses and frames, with details of their construction and heating; descriptions of the most suitable plants, with general and specific cultural directions. 6s. 6d.

Fern Culture, The Book of. By Alfred Hemsley. An excellent handbook of Fern cultivation, well illustrated. 4s.

Ferns, and Fern Culture. By J. Birkenhead. Revised by F. Parsons. A most exhaustive work, containing everything one needs to know of these delightful plants. 1s. 4d.

Ferns, The Book of British. By C. T. Druery. A handy book for beginners as well as connoisseurs. Contains some excellent illustrations. 3s.

Flower Garden, The. By T. W. Sanders. The formation and management of a garden and the culture of outdoor flowers and plants. Plentifully illustrated. 11s. 3d.

Fruit and Vegetables, Packing and Selling. By R. Lewis Castle. A very useful book, written on the many years' experience of the author. 1s. 4d.

Fruit and its Cultivation. By T. W. Sanders. The cultivation of all kinds of hardy fruits, including planting, training and propagation. Also descriptions of pests, with remedies for their eradication. 8s.

Fruit Culture for Amateurs. By S. T. Wright. An illustrated practical handbook on fruit growing in the open air, with chapters on injurious insects and fungi. 1s. 9d.

Fruit Culture, Practical Hardy. By Richard Staward. Well illustrated. 6s. 6d.

Fruit Growing for Amateurs. By H. H. Thomas. Numerous illustrations. A splendid guide for amateurs. 1s. 9d.

To be obtained from—

GARDENERS' CHRONICLE, LTD.,
5, Tavistock Street, Covent Garden, W.C. 2.

SITUATIONS VACANT

Twenty words (or three lines including headline) **4s.,** *and* **1s.** *for every succeeding eight words (or line or portion thereof). Fee for having replies addressed to this office* **1s.**

Advertisers desiring their Advertisements repeated must give **full particulars,** *otherwise no notice can be taken of their communications. Name and address alone are insufficient.*

Gardeners writing to Advertisers of Vacant Situations are recommended to send them **copies** *of testimonials only, retaining the originals. To part with original documents means to run a great risk of their being mislaid.*

When addressing Box numbers, it is essential to give the **initials or pseudonym,** *as well as the correct number of the box.*

MUNICIPAL AND PUBLIC.

UNIVERSITY OF BRISTOL FRUIT RESEARCH STATION, LONG ASHTON, BRISTOL.

THE UNIVERSITY will shortly proceed to the appolntement of a PRACTICAL POMOLOGIST at the above Station.

Particulars of the appointment can be obtained from the Director, to whom applications accompanied by copies of three recent testimonials should be addressed not later than July 22nd.

LANCASHIRE COUNTY MENTAL HOSPITAL, WINWICK, WARRINGTON.

WANTED, JOURNEYMAN GARDENER, must be accustomed to Tomato and Chrysanthemum growing; wages 1/0½d. per hour.

Apply at once to the MEDICAL SUPERINTENDENT

WANTED.—Industrious MAN, age 25 to 30, for Public Park. Wages 50/-.—Apply, F. HANKINS, The Lodge, Queens Park, Kilburn, N.W. 6.

PRIVATE.

CAN any gentleman recommend a first-rate HEAD GARDENER of eight, thoroughly competent in every branch for garden in Kent; good cottage. Also wanted, Out-door FOREMAN for herbaceous borders and rock garden; cottage.—Write, stating wages, age and experience, R. W., Box 14, 5, Tavistock Street, Covent Garden, W.C.2.

WANTED, HEAD GARDENER where three are kept.—State age, wages, experience, etc., to J. WEATHERS, British Gardeners' Association, Park View, Isleworth.

REQUIRED, GARDENER, HEAD WORKING; must have good knowledge Carnations and pot plants.—LODGE, Box 10, Bookstall, S.E. Rly., London Bridge.

EXPERIENCED GARDENER, flowers, vegetables, for Northwood; unmarried; live and meals in; one able drive car for some station work preferred; excellent references essential.—Write, stating age, previous experience, wages required, to Z. L. 880, c/o Deacons, Leadenhall Street, E.C. 3.

REQUIRED immediately, good SINGLE-HANDED GARDENER with all-round experience; accommodation available for single men only. Wages £3 a week, living out; district about five miles from Croydon.—Good references essential, of which only copies should be sent.—J. H. C., Box 1. 5, Tavistock Street, Covent Garden, W.C.2.

WANTED, in 14 days or before, thoroughly respectable SINGLE-HANDED GARDENER, about 25, used to outdoor and Indoor work; best references required; wages 50/-.—Write C. QUITMANN, Forest Holme, Queens Road, Forest Hill, S.E.

EXPERIENCED GARDENER, single, required at once, also to help with poultry; SINGLE-HANDED; age 30 to 45; 25/- a week, board and housing.—Mrs. HUTCHINGS, The Orchard, Dulwich Common, London.

CAN GENTLEMAN recommend experienced GARDENER (age about 30); single; for vegetables and grounds; help given.—MANAGER, Lodge Hill, Butlers Cross, Princes Risborough, Bucks.

WANTED, SECOND GARDENER, married; Inside and Out; energetic; good knowledge of Carnations, Plants, and general work all round.—MASON, Langton Hall, Market Harborough.

WANTED, FOREMAN, for fruit and plant houses; must be good decorator; wages 42/-; bothy, etc.; duty paid extra.—E. BERRY, Spenfield Gardens, Marlow, Bucks.

WANTED, FOREMAN for Pleasure Grounds; must be well recommended; wages £2 per week with bothy.—Experience, age, and references to A. J. HINES, Nuneham Park Gardens, Oxford.

WANTED, energetic MAN with good experience of rare and choice shrubs, Rhododendrons, etc.; state wages with cottage; age; good references.—S. R. CONN, Borde Hill Gardens, Cuckfield, Sussex.

WANTED, LEADING HAND for kitchen garden, must be well up with hardy fruit, vegetables, and salads; 35 to 40; wages 40/-, house and garden; give full particulars.—H. WRIGHT, Minley Manor Gardens, Farnborough, Hants.

WANTED, strong MAN for Kitchen Gardens and Pleasure Grounds; motor mower experience; state wages, recent references.—BERRISFORD, Winmarleigh, Garstang, Lancs.

WANTED, experienced KITCHEN GARDENER, able to do duty; also PLEASURE GROUNDSMAN understanding motor mower. Wages 32/- per week, bothy and attendance.—Particulars to W. HORNE. Danbury Park, Chelmsford.

WANTED, YOUNG MAN for pleasure grounds; 30/- and bothy.—Apply, The Gardens, Cobham Hall, Kent.

WANTED, JOURNEYMAN, experienced Inside and Kitchen garden; wages 32/-, bothy, etc.—Apply, with full particulars, to H. CROSSFIELD, Nidd Hall Gardens, Ripley, Harrogate, Yorks.

WANTED, good JOURNEYMAN; experienced Inside and Out; no bothy; references and particulars to C. J. DANN, The Gardens, Bidborough Court, near Tunbridge Wells.

WANTED, JOURNEYMAN, experienced for Inside and Out; bothy, etc., duty alternate weeks. State age, wages, with particulars and copies of references.—R. MASON, Muncaster Castle Gardens, Ravenglass, Cumberland.

WANTED, Outside JOURNEYMAN, with knowledge of, or desire to learn use of Motor Mower, also with Kitchen Garden experience.—Apply to H. WHEELER, Wenvoe Castle Gardens, near Cardiff.

WANTED, JOURNEYMAN for Fruit and Plant Houses; state wages with bothy, 5/- extra duty.—C. A. BAYFORD, Davenham Gardens, Malvern.

WANTED, for Sussex, good JOURNEYMAN, Inside; also JOURNEYMAN Outside; good lodgings.—Particulars of experience, age, and wages expected to H. G. T., Box 8, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, good JOURNEYMAN for Orchid houses; bothy.—Apply, with copies of testimonials to H. G. ALEXANDER, Westonbirt, Tetbury, Glos.

WANTED, YOUNG MAN about 24 as odd man and fill up time in garden. Wages 15/- per week with board and lodging.—Apply MISKIN, Woodseat, Rocester, Stafford.

TRADE.

A LEADING FIRM of Nurserymen, Seedsmen and Florists has an opening for an UNDER-MANAGER capable of taking full charge of staff in large Seed Establishment. Must have a general knowledge of the business, good correspondent, capable and reliable in every respect. Scotch experience desirable. Replies treated as confidential.—Apply ARGUS, Box 44, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, WORKING FOREMAN, small glass nursery, experienced Toms., Cues., Mums., etc.; acre garden; state wages; for nursery, Fleetwood, Farnboro', Kent.—Or apply E. PLUMBRIDGE, 8, Moorfields, E.C. 2, opposite Moorgate Street Railway Station.

WANTED, WORKING FOREMAN, experienced **in Herbaceous and Rock Plants** and **some knowledge of Shrubs, in small progressive** Nursery. **—Reply, with copies of testimonials, general** particulars and **wages required to C. COLLYER, Everton** Nurseries, **near Lymington, Hants.**

WANTED, WORKING FOREMAN for small Nursery; Toms., Cues., Mums., bedding and general herbaceous. Lodging for single man.—Full particulars, etc., to LANGRIDGE & CO., Westerham, Kent.

WANTED, FOREMAN, WORKING, Inside, a grower with best all-round training experience of market crops and supplies for a medium-sized place; an opportunity for a worker of ability and capable, to improve his position; good cottage provided on nursery (North of England); very full details and references and wages to commence required.—CORN, Box 5, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, YOUNG MAN for Fern raising in quantity.—State experience and wages required to E. CURRY, Whitehall Lane Nurseries, Chingford.

WANTED, good GROWER Toms., Cues., Chrys. and wreath making; take charge of 6 small glasshouses; wages £2 7s. week; good reference.—LLEWELLYN, Sunny Hill Nurseries, Llanelly.

WANTED, YOUNG MAN for five small glasshouses; experienced in bedding plants, climbers and herbaceous perennials; one with knowledge of floral work preferred.—Apply JOHN PERKINS & SON, 52, Market Square, Northampton.

WANTED, two or three experienced GARDENERS of good character for Jobbing and Landscape work.—Apply with full particulars to WM. BIGNELL & SON, 48, North Road, Highgate Village, N.6.

WANTED, for Fruit Tree Nursery, good KNIFESMAN to work under Foreman; successful budder.—Apply, stating age, experience, and wages required, to GEORGE PYNE, Denver Nurseries, Topsham, Devon.

WANTED, TWO good ROSE and FRUIT BUDDERS.—Apply, giving particulars, to GIBSON & CO., Leeming Bar, Bedale.

WANTED, a NURSERYHAND used to Tomatoes and Cucumbers; single preferred.—Apply, with references and wages required, to RICHARDS, Wellsbridge, Bristol.

WANTED, INSIDE GROWER, young Man with few years of best experience of market crops under glass; must be good grower and know his work; liberal terms to capable man.—State experience, references, and wages required to commence.—KERR'S LIMITED, Penrith.

WANTED, two YOUNG MEN, one for pleasure grounds and one for Inside Work (Toms., Cues., Mums., etc.).—Apply E. MISSING, Head Gardeners' Lodge, Battenhall Mount, Worcester.

EXPERIENCED MAN required with a good knowledge of the Bulb trade, to take charge of London warehouse. Good opportunity for the right man; state age and wages required.—Apply M. B., Box 2, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, Part-time REPRESENTATIVE in Wales for wholesale garden and root seed house, calling on seed trade. — S. K. L.,, Box 58, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, part-time RESIDENT REPRESENTATIVES to call on nursery and seedsmen; bulbs, continental flowering and foliage plants in the undermentioned centres:—South Wales, North Wales, Plymouth, Exeter, Isle of Wight, Eastern Counties, Dover, Bristol, Birmingham, Derby, Norwich, Sheffield, Hull, Stockton, Worcester, York. —D. W. M., Box 31 5, Tavistock Street, Covent Garden, W.C. 2.

FLORIST FURNISHER and DECORATOR, male, for large West-end hotel; experienced; good references.—Write G. R., c/o 54, New Oxford Street, W.C.

WANTED, YOUNG LADY as first-class FLORIST, one to take charge. Apply stating salary required and experience, etc., to BARNWELL BROS., Florists, Worthing.

LADY FLORIST as FIRST ASSISTANT wanted, capable of taking charge.—Particulars to KENWARD & SON, Florists, Lewes.

SITUATIONS WANTED

Twenty words, **2s., and 6d.** *for every succeeding eight words or portion thereof. (Advertisements at this special rate are only accepted direct from gardeners and nursery employees. Fee for having replies addressed to this office,* **1s.**

PRIVATE.

GARDENER, HEAD. The estate agent of Ottershaw Park will be pleased to highly recommend E. HAYES to any lady or gentleman requiring a thorough reliable HEAD GARDENER with first-class experience in all branches, Inside and Out; 4 years here; married; age 37.—E. HAYES, Ottershaw Park Gardens, Chertsey, Surrey.

P. H. BAYER, Esq., highly recommends his HEAD GARDENER; life experience gained in good establishments; age 40; married, no family.—Apply F. NOBLE, Hatch Beauchamp Lodge, Withdean, Brighton.

F. N. PICKETT, Esq., can with confidence highly recommend his HEAD GARDENER and SON, SECOND if required; leaving, estate being sold.—HOWARD, Welham Manor, Hatfield, Herts.

GARDENER, HEAD, life experience, seeks engagement; aged 37; married, one child; excellent references.—KNOWLES, Holly Lodge, Long Cross, Chertsey, Surrey.

GARDENER, HEAD, or SINGLE-HANDED, seeks situation; life experience gained in good establishments; married when suited.—SMITH Sheepwell, Potters Bar.

EXPERIENCED GARDENER, HEAD or SINGLE-HANDED; understands electric light plants, estate carpentry and poultry, also able to drive car. — BUTLER, Bradfield, North Road, Chorley Wood, Herts.

GARDENER, HEAD or SINGLE-HANDED, seeks situation; life experience; married; age 37; good references.—E. HENDERSON, Westhough, Carleton, Pontefract.

GARDENER, HEAD WORKING, desires re-engagement; life experience all branches; excellent references from good establishments; age 36; married, no family.—A. LEANING, Old Dalby, Melton Mowbray, Leicester.

HEAD WORKING GARDENER, practical man; life experience all branches gardening; age 35; married, no family; well recommended.—A. PRIOR, The Mount Gardens, Whitchurch, Reading.

GARDENER, HEAD WORKING, seeks situation where several are kept, good practical experience in all branches; excellent testimonials from first class establishments; married when suited.—Apply, J. COTTRELL, Oldland's Hall, Uckfield, Sussex.

GARDENER, HEAD WORKING; married, no family; practical experience in fruit, flowers and vegetables with good private families; highest references. —Apply, with full particulars, GARDENER, Springhead Cottage, Ferndale, Tunbridge Wells.

GARDENER, HEAD WORKING, thoroughly practical, expert cultivator, Fruits, Vegetables, Flowers, Inside and Out; life experience in good gardens; highest references for capabilities and organising.—GARDENER, c/o Miss Hawkes, Culworth, Banbury, Oxon.

GARDENER, HEAD WORKING; life experience all branches; age 36; one child; good references.—A. J., B. Box 9, 5, Tavistock Street, Covent Garden, W.C. 2.

GARDENER, HEAD WORKING; experienced Inside and Out; fruit, flowers, vegetables; age 42; married, no family; excellent references from employer. — F. WICKS, Chearsley, Aylesbury, Bucks.

GARDENER, HEAD WORKING, 19 years' practical experience in all branches; excellent references; understands electric light; 5 years Head; married; home counties preferred.—H. S. E., Box 10, 5, Tavistock Street, Covent Garden, W.C. 2.

GARDENER, HEAD WORKING, of three or four; life experience in growing fruits, flowers, plants and vegetables, inside and out; 8 years present place, 14 years previous; married, no family.—A. COLEMAN, Down Place, Windsor.

HANNAM E. MILES, Esq., Agent to the Clouds Estate, strongly recommends H. FULFORD as HEAD WORKING GARDENER, thoroughly efficient in all branches, economical manager; left owing to mansion being closed.—H. FULFORD, Portland Square, Heathfield, Sussex.

GARDENER, HEAD WORKING, life experience in all branches, 14 years as head, excellent references; estate sold; age 47, married; please state wages. — BATES, Tadmor Gardens, Sunbury-on-Thames.

GARDENER, HEAD WORKING, or good SINGLE-HANDED; life experience in all branches; 10 years present situation; age 35; married; two children.—A. L. BROWN, Blounts Court Lodge, Potterne, Wilts.

GARDENER, HEAD WORKING or SINGLE-HANDED, seeks situation; life experience; age 38; married, with cottage; four years' three months present place; highly recommended.—PREVETT, Horsgate Lodge, Cuckfield, Sussex.

GARDENER, SINGLE-HANDED or otherwise; age 45; life experience; well recommended; wife's services if required; cottage.—RANGER, New Cottages, Riverhill, Sevenoaks, Kent.

GARDENER seeks situation, SINGLE-HANDED, good all-round, married, no family, good references. — GARDENER, The Lodge, Firs Cottage, Esher, Surrey.

FOREMAN or SINGLE-HANDED requires situation, life experience inside and out; bothy or rooms required; good reference last place; singe, age 48.—W. MAY, 58, Rhyl Street, Kentish Town, N.W. 5.

FOREMAN, Inside or General: 29; single: experienced; fruit and plants, Carnations, Orchids etc.; northern counties; state wages.—A. H., Box 6, 5, Tavistock Street Covent Garden, W.C. 2.

FOREMAN, KITCHEN GARDENER or SINGLE-HANDED; highly recommended; age 30; married, one child; London area preferred.—Apply G. S. D., Box 12, 5, Tavistock Street, Covent Garden, W.C. 2.

UNDER - GARDENER seeks situation; married when suited; age 25; good references.—P. A. G., Box 7, 5, Tavistock Street, Covent Garden, W.C. 2.

UNDER-GARDENER requires situation in Kitchen garden or Inside and Out; age 29; married, no family; good references; North Yorkshire preferred.—G. LONSDALE, Barwick-in-Elmet, nr. Leeds.

MAN, age 30, seeks situation in Kitchen Garden or Pleasure Grounds, able to take duty; good references.—T. BOULTON, The Gardens, Penrice Castle, Reynoldston, Swansea.

JOURNEYMAN, 24, seeks situation in good gardens; 8 years' experience, pleasure grounds, hardy plants and fruit; strong conscientious worker, time not considered where further knowledge can be obtained.—E. A. K., Box 11, 5, Tavistock Street, Covent Garden, W.C. 2.

JOURNEYMAN requires situation Inside and out or Outside; 8 years' experience chiefly Outside; age 25; please state wages.—A. B., 16, Catford Hill, Catford, S.E. 6.

JOURNEYMAN, Inside, age 27, seeks situation, home counties preferred; good experience and references; bothy. — HEASOM, Cold Overton, Oakham, Rutland.

JOURNEYMAN, 22, requires situation, plant houses preferred; bothy; 4 years Wrotham Park.—Apply A. BALDWIN, Gunton Park Gardens, Norwich.

WANTED, Situation as JOURNEYMAN, Inside, or Inside and Out; age 24; 10 years' experience.—HUGHES, Tredegar Park Gardens, Newport, Mon.

IMPROVER, 18, requires situation Outside; some experience; bothy preferred.—S. TOWN, 33, Lyons Place, Maida Hill, N.W. 8.

YOUNG MAN (20) seeks work in Gardens; over 2 years present situation as footman, 2 years previously looking after electric plant and assisting in gardens.—W. EVANS, Harcourt, Stanton, Shrewsbury.

TRADE.

ADVERTISER desires engagement with good class Landscape Gardening Firm, safe estimator of labour and general quantities, complete knowledge of hardy trees and shrubs; accustomed to interviews with best class Clients.—Apply, L. M., Box 3, 5, Tavistock Street, Covent Garden, W.C. 2

SITUATION Wanted as WORKING PARTNER or MANAGER in small Florist's Nursery.—Particulars to GARDENER, 51, St. Leonards Road, Windsor.

GROWER requires situation; life experience, general market crops; disengaged, distance no object; can take charge. Bulb growing a speciality.—WHITE, c/o G. T Cox, 130, Nightingale Road, Hitchin.

HARD COURT CONSTRUCTION.—MAN requires employment; experience with best firms; also landscape.—DEAN, 51, Oval Road, Croydon.

HANDY-MAN, greenhouse painting, glazing, repairs, rebuilding; trade or private; could take same piece-work. — J. COWLIN, 72, Shacklegate Lane, Teddington, Middlesex.

W. RICHARDSON & CO., LTD.,

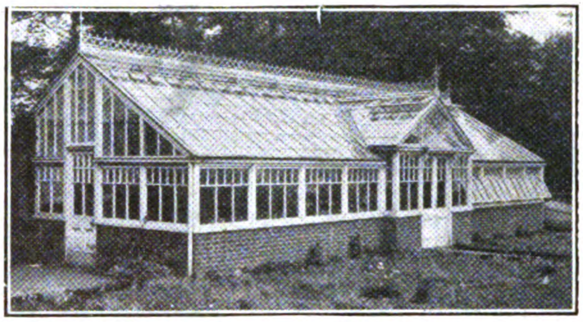
HORTICULTURAL BUILDERS
AND
HEATING ENGINEERS,
DARLINGTON.

LONDON OFFICE:
Albert Mansions, Victoria St., S.W.1.

We invite enquiries for Conservatories, or Growing Houses, fully equipped.

Representatives sent to take particulars.
Best Value at Lowest Prices.

Catalogues, Plans & Estimates Free.



NOW is the time to order:
(*a*) **Shading for your Glasshouses.**
(*b*) **Repairs and Repainting.**

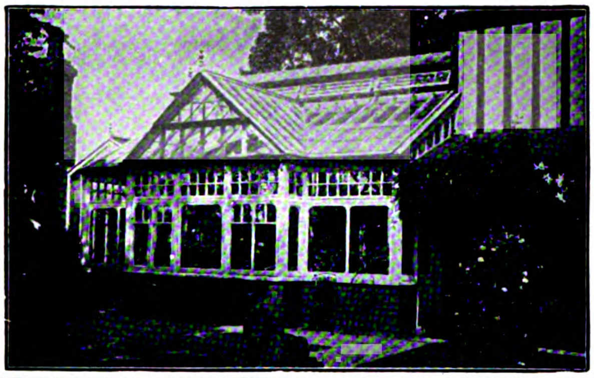
We supply **Wood Lath Blinds and Fittings** and guarantee success.

We keep a special staff for **Repair Work and Repainting**—use guaranteed genuine white lead paint—and can assure you of best results.

GARDEN FRAMES, GARDEN SEATS, &c., supplied from stock.

FOSTER & PEARSON, LIMITED,

BEESTON, NOTTS.



Have been building Greenhouses from 1841 to 1924, a record of 83 years of sound construction.

GOOD Greenhouses last—others do not.

The ROBIN HOOD BOILER reduces the fuel bill and saves labour.

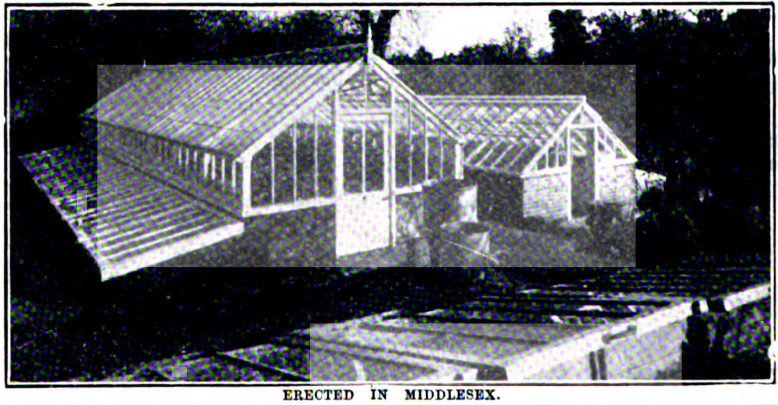
Estimates on application Free

CARTER GLASSHOUSES

Horticultural Builders & Heating Engineers
HOWARD
KINGSTON ROAD,
RAYNES PARK,
LONDON, S.W. 20.

For
DRAWINGS, embodying expert planning,
SPECIFICATIONS, detailing genuine materials and skilled craftsmanship,
ESTIMATES, giving lowest prices consistent with above conditions,
write to above address.

All Buildings erected complete with Brickwork and Heating Apparatus in any part of the country.
ESTABLISHED 1909.

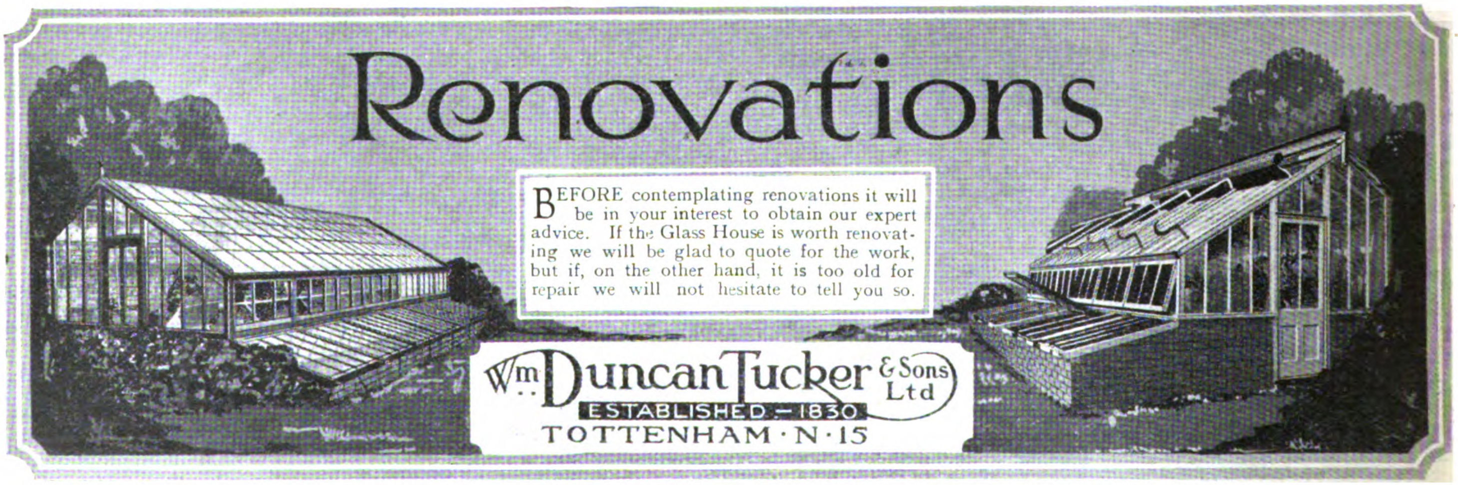


ERECTED IN MIDDLESEX.

Telephone:
WIMBLEDON 2377.

FOR
PALM COURTS,
WINTER GARDENS,
CONSERVATORIES,
ORCHID HOUSES,
GREENHOUSES,
VINERIES,
GARDEN FRAMES,
FRUIT ROOMS,
GARAGES,
VERANDAHS,
SUMMER-HOUSES, etc.

Competitive Estimates for **REPAINTING** with genuine **WHITE LEAD PAINT.** Mixed on the Job.



Renovations

BEFORE contemplating renovations it will be in your interest to obtain our expert advice. If the Glass House is worth renovating we will be glad to quote for the work, but if, on the other hand, it is too old for repair we will not hesitate to tell you so.

Wm Duncan Tucker & Sons Ltd
ESTABLISHED — 1830
TOTTENHAM · N · 15

G.A. 956.

Printed by H. M. POLLETT & Co., LTD., Fann Street, London, E.C. 1, and published weekly by THE GARDENERS' CHRONICLE, LTD., 5, Tavistock Street, Covent Garden, W.C. 2. Saturday, July 5, 1924.

Stanford Library
JAN 15 1925
O

THE GARDENERS' CHRONICLE

ESTABLISHED 1841

Nº 4383

No. 1983. VOL. LXXVI. THIRD SERIES SATURDAY, DECEMBER 27, 1924. Registered as a Newspaper. PRICE 6d. POST FREE 7d.

SUBSCRIPTIONS—Inland or Foreign 30/- per annum, post free. Entered at New York Post-Office as second-class matter.

Postal Address—5, Tavistock Street, Covent Garden, W.C. 2. Telegraphic Address—"Gardchron, Rand, London." Telephone—Gerrard 1543.

ENGLAND'S FINEST!

WE hold sole cutting rights on the finest Dorset and Norfolk peat estates. Graded as Very Fine Fibrous Orchid, Brown Fibrous, Hard-Wooded, or Rhodo. quality, all this peat is in irreproachable condition. Loaded in trucks at Wareham, Dorset, or Weybourne, Norfolk.

PEAT

G. H. RICHARDS LTD.

234, Borough High Street, London, S.E. 1.

PERPETUAL-FLOWERING CARNATIONS for the greenhouse and the Garden; catalogue free on application.—C. ENGELMANN, Carnation Grower, Saffron Walden, Essex.

WATERER'S Gold Medal Rhododendrons, Azaleas and Roses, rare Hardy Shrubs, Fruit Trees, Berries, etc., Alpine and Perennial Plants, Vegetable and Flower Seeds, Scotch-grown Seed Potatoes. Catalogue free.—JOHN WATERER, SONS & CRISP, LIMITED, Twyford, Berks; Bagshot, Surrey; and London.

BARR'S surplus Spring-flowering Bulbs—Daffodils, Tulips, Hyacinths, Chionodoxas, Scillas, Muscari Heavenly Blue, etc. Bulbs in splendid condition at greatly reduced prices. Descriptive List on application. BARR & SONS, King Street, Covent Garden, W.C.2.

DOBBIE'S 1925 Catalogue and Guide, 136 pages, 194 illustrations; free to all readers. Please mention "Gardener's Chronicle" when writing.—DOBBIE & CO., Ltd., Edinburgh.

BATH'S CARNATIONS, ROSES, and PEONIES. New Illustrated Catalogue containing full cultural notes of the best new and standard varieties is now ready, and will be sent post free on application.—Dept. (A). R. H. BATH, LTD., The Floral Farms, Wisbech.

SCOTCH-GROWN SEED POTATOES, all the best immune varieties, new season's price list now ready, early enquiries solicited.—D. G. PURDIE, 6, Waterloo Street, Glasgow.

HARDY PHLOXES.

IN all the new and most brilliant shades of colour. List now ready.

GUNN & SONS, Olton, Warwickshire.

A COPY of "LAWNS AND THEIR UPKEEP" forwarded free on application to JAMES MACDONALD, Grass Specialist, Harpenden.

HEARTIEST GREETINGS of the Christmas and New Year Seasons to all engaged in the time-honoured profession of gardening. May the seasons of 1925 assist substantially the labour, knowledge, skill, and unceasing attention necessary to the successful cultivation of flowers, fruits, and vegetables, which, each in their own way, contribute so universally and fundamentally to health and brightness and joy in every sphere of life.

DICKSON & ROBINSON, MANCHESTER,

Seedsmen Royal Warrant Holders.

NOW is the time to plant—
KELWAY'S Lovely New Paeonies.
Price Lists on application.

Also ask for Special offer of Paeonies, all colours, for planting in quantity in shrubberies, parks, and wild gardens.

KELWAY & SON—LANGPORT.

NOW IS THE TIME TO PLANT

THE KELWAY COLOUR BORDER of Hardy perennial Plants.

"A combination of the beautiful and practical has driven away the age of Brussels carpet from our gardens as woolwork and stuffed birds have been ousted from our drawing-rooms. There is no bare ground in a garden arranged on this plan; every portion of earth is made to yield its quota of beauty—beauty without a break from the birth of the year, 'when spring unlocks the flowers to paint the laughing soil,' until the ground is frost-bound: and even then there are floral gems, the 'gems with which fair Nature decks herself' gleaming here and there amid the snow. So that the enjoyment of a garden is extended and at the same time increased." From *Gardens of Delight*.

Send dimensions of space to be filled, and the colour effect desired, stating aspect and soil and the season the borders are required to be in flower.

Write now to:—

**KELWAY & SON, The Royal Horticulturists,
LANGPORT.**

WELLS' CATALOGUE OF CHRYSANTHEMUMS now ready, and will be sent post free on application.—W. WELLS & CO., Merstham, Surrey.

CHOICE NEW CHRYSANTHEMUMS.—Our Catalogue of nearly 900 varieties including Grand Novelties for 1925 (also choice Pelargoniums, Dahlias, etc.), is now ready. Post free on application.—J. W. COLE & SON, Westwood Nurseries, Peterborough.

SANDERS, ORCHID GROWERS,
St. Albans.

SUTTON'S GUIDE AND CATALOGUE

OF VEGETABLE AND FLOWER SEEDS Etc. for 1925 is now published

All lovers of the garden should secure a copy.

Profusely illustrated in colour and black-and-white, and contains a complete list of the best varieties of Flowers and Vegetables, etc.

SUTTON & SONS, The King's Seedsmen

☛ READING. ☚

MACKENZIE & MONCUR, LIMITED, Hothouse Builders and Heating Engineers, London, Edinburgh and Glasgow. By Appointment to H.M. The King. London Office: 8, Camden Road, N.W.1.

WM. DUNCAN TUCKER AND SONS, LTD., Lawrence Road, South Tottenham, N. 15, Conservatories, Winter Gardens, Vineries, Peach-houses. Portable Buildings, etc.

JAMES GRAY, LTD., Builders of Conservatories, Greenhouses, etc., and Heating Engineers, 20Q, Danvers Street, Chelsea, London, S.W. 3. Wire GRAY, Kensington 90. Telephones: Kensington 90 & 91.

RUSSELL'S CLEMATIS; in all new and leading varieties. Catalogues on application.—L. R. RUSSELL, LTD., Richmond Nurseries, Richmond, Surrey.

KETTERING LOAM.—Apply to the WICKSTEED VILLAGE TRUST, Kettering.

HAVE YOU PROVIDED? See United Horticultural Benefit and Provident Society's Advertisement on Page vi.

HYDRANGEA MAD! a delightful sensation caused by growing the lovely new varieties; send for H. J. Jones' Catalogue of Gold Medal Hydrangeas, Chrysanthemums, Montbretias, Michaelmas Daisies, Hardy Phlox, etc., free on application. Also H. J. Jones' Chrysanthemum Guide, 17th edition, post free, 1/3.—Ryecroft Nurseries, Lewisham.

SALES BY AUCTION.

GREAT TRADE SALE

Wednesday Next, December 31st.

IMMENSE IMPORTATIONS OF

JAPANESE LILIES.

1050 CASES

including

520 Cases of Lilium Longiflorum Giganteum,

230 Cases of Lilium Auratum,

120 Cases of Lilium Speciosum Rubrum and Melpomene,

60 Cases of Lilium Speciosum Album, Lilium Tigrinum, Henryi, etc.

The Sale will also include

Consignments of Dutch Bulbs in variety, Palms, Bay Trees, Aspidistras, Azaleas, etc., from Belgium.

MESSRS. PROTHEROE & MORRIS

will sell as above at their SALE ROOMS,

67 & 68, CHEAPSIDE, LONDON, E.C. 2.

Catalogues post free on application.

AUCTION SALES OF

ROSES,

Rock and Herbaceous Plants,

FRUIT TREES,

Flowering Shrubs, etc., by

MESSRS. PROTHEROE & MORRIS

every

MONDAY, WEDNESDAY AND FRIDAY,

at

67 & 68, CHEAPSIDE, LONDON, E.C. 2.

Write for Catalogues Phone City 3850.

STEVENS'S

Sales by Auction of

BULBS, ROSES,

Ornamental Plants

and Shrubs.

Every Monday and Wednesday.

In lots to suit all buyers.

Commissions executed.

Catalogues on application.

38, KING STREET,
COVENT GARDEN, LONDON, W.C. 2.

BY ORDER OF MESSRS. BURFOOT BROS.
(DISSOLVING PARTNERSHIP).

MIDDLE ROAD,
KINGSTON - BY - SEA, SUSSEX.

About ½ mile from Shoreham-by-Sea and Southwick Stations, Southern Railway.

Important Unreserved Three Day Sale of the whole of the Stock of the Firm of Market Gardeners, Nurserymen and Flower Growers.

HARRY JAS. BURT.

Is instructed to sell by Auction, upon the premises on

Friday, Saturday, and Monday, January 9th, 10th, and 12th, 1925, at 10.30 o'clock each day.

The whole of the stock of the Firm of

Market Gardeners, Nurserymen and Flower Growers.

Comprising:—

On FRIDAY AND SATURDAY.

4 Active and Powerful Cart Horses, 13 Strong Store Pigs, and the Implements and Machinery,

Including Trolley Wagon, 6 Manure Carts, 9 EXCELLENT MARKET GARDENERS' SPRING VANS, 2 FORD LORRIES, 1 ton and 7 cwt., in good running order, 2 excellent Potato Diggers, 3 MOTOR PLOUGHS by Wyles and Fowler, CLAYTON CATERPILLAR TRACTOR, with 35 H.P. Dorman Engine, 8 Platform Weighing Machines, 9 sets of Thill, Plough and Van Harness, and a very large assortment of miscellaneous tools and tackle, 370' RUN OF HOT WATER PIPE. 3", 4", 5", with various fittings, 1,700' RUN OF THREADED WATER PIPE, ½", ¾", and 2", with various fittings, 1,000' of 24" GAUGE TRAMWAY with 2 Tip Waggons, 2 Flat Trucks and Turntable, 870' run of Iron Wheeling planks, large quantity of USEFUL TIMBER and Building Material, 4,000 Market Gardeners' Boxes, various, 600 square feet of Horticultural Glass, 2,300 Potato Trays, 13,500 Flower Pots, various, Remington No. 10 Typewriter.

On MONDAY.

About 1,100 Lots of Hardy Perennial Plants,

Including 78,500 Pyrethrums, 35,000 HER MAJESTY'S PINKS, 6,000 Gaillardia, 3,500 Coreopsis, 5,000 Scabiosa, 5,000 Doronicums, 2,500 Statice, 1,700 Geraniums, 4,000 Michaelmas Daisies, 3,000 Lavender, 2,600 BOXES OF DAFFODIL BULBS, quantity of GLADIOLUS BULBS, 5,000 Ferns in Pots, 15,000 Rhubarb Stools, Mint Beds, 23 Young Peach Trees, and a large number of CHRYSANTHEMUM STOOLS.

SUFFICIENT TIME IS ALLOWED FOR CLEARANCE.

Also 740 TRAYS OF SEED POTATOES
(English Class 1 as grown)

Catalogues may be obtained of the Auctioneers, Steyning, Sussex (Telephone 40).

BUSINESS FOR SALE.

ESTABLISHED COMPACT NURSERY, favourably situated in Bath; seven glasshouses, well-heated (3,500 sup. ft.), stocked with Roses, Asparagus Fern, Sprengeri, Arums, Violets, &c.: 50 ft. run frames, 1,000 yards of early light land, garage, main water and gas laid on; good 7-roomed house in residential neighbourhood: full possession on completion.—MARKET 1, Holloway, Bath.

PLANTS, &c., FOR SALE.

Small Classified Advertisements. Twenty words (or three lines including headline) **4s.**, *and* **1s.** *for every succeeding eight words (or line or part of a line). Fee for having replies addressed to this office,* **1s.** *Displayed advertisements,* **8s.** *per inch, or* **10s.** *facing editorial matter.*

ELLISON'S PEDIGREE SEEDS and Scotch Seed Potatoes are grown by thousands of satisfied customers. You should be included among that ever-increasing number. Quality absolutely reliable. 64-page catalogue, calendar and garden guide free. Seeds, spring-planting bulbs, roses, fruit trees, garden books, and sundries at most reasonable prices. G. & A. Fertiliser, 5/- cwt. Shallots, 14 lb. 7/- carriage paid.—ELLISONS, 45, West Bromwich. Established 1890.

FERNS! CALADIUMS!!—Begonias, Palms, Crotons, Dracaenas, Gloxinias, Hydrangeas, Geraniums, Ericas, Lilies, Ferns and How to Grow Them, by J. E. Smith, 3/6 post free.—SMITH, London Fern Nurseries, London, S.W. 9.

100,000 LARGE GARDEN FERNS, 30/- 100, variety; wanted 1,000 large Aspidistras for dividing. Catalogues free.—SMITH, Fernery, London, S.W. 9.

PALMS AND BAY TREES. Bay Trees established in tubs; magnificent selection in all sizes. Sizes and prices on application. Unique collection of Palms in all sizes. Prices and catalogue on application.—ROBERT GREEN (1911), LTD., 28, Crawford Street, London, W. 1.

HIMALAYAN, Chinese and other Rhododendrons on their own roots. Shrubs, Alpines, and border plants, Aquatics, Lilies, etc. Write for Lists.—G. REUTHE, Keston, Kent.

HIMALAYAN ORCHIDS.—12 different grand flowering sorts, 24/-; 12 Pleiones, mixed, 20/-; 6 sorts Cymbidiums, 25/-; all pd. cash; list free.—CHANDRA NURSERY, P. O. Rhenock, Sikkim (Bengal), India.

ALPINES and DWARF CONIFERS for Rock Gardens; 50,000 Pot-grown Alpines in stock; over 300 vars., 2 dozen collection. 8 kinds, 15/- c.pd. Lists free.—Garden Dept., HODSONS, 58, Castlegate, Nottingham.

ALSTROEMERIA AURANTIACA. The Golden Lily of Peru. Plant now for best results. Beautiful Perennial for cutting or border. 25 roots for 5/-, post paid. For trade terms apply A. SHORTHOUSE, Hampton, Middlesex.

PLANTS FOR FORCING.—MORLE & CO., Ltd., offer Azalea Indica and mollis, Acers, Almonds, Deutzias, Genistas, Hydrangeas, Laburnum Vossi, L. Valley, Liliums, Lilacs, Rhododendrons, Spiraeas, Wisterias, etc., grown in pots.—156, Finchley Road, N.W.

PAEONIES.—We offer strong clumps in 12 very best sorts, 12/- doz.; Delphiniums ditto, 9/- doz.—MORLE & CO., as above.

AUCUBA CROTONOIDES.—The new Aucuba, very heavily spotted, two and three branches, 12/-; four and six ditto, 18/- doz.—MORLE & CO., as above.

CLIPPED BOX AND YEWS.—Large stocks of perfect plants, 3 to 3½ feet, 48/-; 3½ to 4 feet, 60/- dozen; also standards.—MORLE & CO., as above.

BUSH PRUNUS PISSARDII, 3 to 4 ft., 18/- doz.; Ceanothus G. de V. and M. Simon, 42/- doz.; Japanese Maples in variety, 42/- doz.—WM. BIGNELL & SON, Highgate, N. 6.

ENGLISH YEWS, 1½ ft. to 5 ft.; good stocks.—WM. BIGNELL & SON, Highgate, N. 6.

STANDARD ALMONDS (sold out), can now offer Cerasus Hisakura, Limes, Prunus triloba, Prunus Pissardii, Acer negundo var., etc., etc.—WM. BIGNELL & SON, Highgate, N. 6.

FOREST TREES, Japanese and European Larch, Douglas and Silver Fir, Sitka Spruce, etc.: grand stuff. Also Thorn Quicks and Privet. Catalogue free.—WM. POWER & CO., Waterford, Nurserymen and Seed Merchants.

ASPARAGUS ROOTS, specially grown for forcing; large strong crown.—Apply JOHN POUPART, Walton-on-Thames.

IRISH SEED POTATOES, Certified Stocks. Prices on application.—WM. POWER & CO., Waterford, Nurserymen and Seed Merchants.

POTATO ONIONS, sound hand-picked bulbs, per box of 10 lbs., post free, 8/-.—WM. POWER & CO., Waterford, Nurserymen and Seed Merchants.

Get Britain's Best Roses
from Dickson's
"HAWLMARK"
Newtownards
Co. Down

MISCELLANEOUS.

IRON AND WIRE FENCING for Gardens, Tree Guards, Gates, Arches, Espaliers, Rose Stakes, and Ornamental Garden Iron and Wire Work of every description; send for illustrated catalogue.—Also Kennel Railing and Poultry Fencing. Ask for separate lists.—BOULTON & PAUL, LTD., Norwich.

BIRDS' BATHS, Sundials, Vases, Statuary, Birds' Nesting Boxes, etc.—Catalogue (No. 3) free.—MOORTON, 60, Buckingham Palace Road, S.W.1.

STONE PAVING.—Crazy and rectangular York Garden Paving, Copings, Steps, etc., Grit and other Rocks for Rock Gardens; Flat Stone, Rubble for "Dry" Walls. Nottingham Marl. Large or small quantities carriage paid to any Railway Station in England.—HODSON & SONS, LTD., Castlegate, Nottingham.

SELECTED GREY WESTMORELAND Weathered and Waterworn Mountain Limestone Rockery. The finest Rockery Stone; also York Stone Garden Paving—HERBERT BROOK, High Road, Whetstone, N.20; and Lightcliffe, Yorkshire.

BANSTEAD or Walton Heath Loam; a choice soil for Vines, Chrysanthemums, Carnations, and general use.—YOUNG BROS., Betchworth Station, Surrey.

TURVES—Specially prepared for Lawns, Tennis Courts, Bowling Greens, etc. Dark and yellow fibrous turf loam. Inspection invited.—FROGLEY & SONS, Hoddesdon, Herts.

GENUINE CUMBERLAND TURF, Red Shale for hard tennis courts; Weathered Limestone Rockery, Crazy Paving and Stone for garden making; White Spar. State requirements.—KERSHAW'S LTD., Garden Makers for 50 years, Keighley.

FINEST LOAM in England: new Surrey cutting, very fibrous; truckloads quoted. Trial bags Leafmould, Loam, Sand, or Peat, 3/- each; B. Slag, 6/6, Super., 9/-.—HERBERT SHEA, Soil Expert, Romford.

PEAT MOULD for Rhododendron and Nursery Work, 5/- bag, 25/- ton, in truckloads on rail.—WALKER, Pinewoods, Camberley.

GRAVEL (Surrey), binding without stickiness, for paths and roads, 12/6 per ton on rail in truck.—WALKER, Pinewoods Camberley, Surrey.

COAL, Coke and Anthracite.—Trucks to any station. House Coal from 16/- per ton pit; Welsh Anthracite, 30/-; SemAnthracite (registered), 25/-; Semi Anthracite, 20/-; Horticultural Coke, 18/-. All in sizes suitable for any furnaces.—BUCKLE COLLIERY CO., 59, Hales, Cheltenham.

SEWAGE DISPOSAL for country houses, factories, farms, etc.; no emptying of cesspools; no solids; no open filter beds; everything underground and automatic; a perfect fertiliser obtainable.—WILLIAM BEATTIE, 9, Lower Grosvenor Place, Westminster.

C. VICKERS, Expert Florist, eleven gold medals for floral designs (three Shrewsbury). Any price floral design to suit customers, carriage and packing free.—Morley Arcade, Leicester.

EVERY Horticulturist should read "The Horticultural Exhibitor," A. J. Macself's latest book. It teems with valuable information and sound advice for all who grow for show. 3/6 net of all Booksellers—Send for prospectus of the "Home Garden Books" to the Publishers, THORNTON BUTTERWORTH, LTD., 15, Bedford Street, Strand, W.C.2.

CHEAP WIRE!—Handy for every training purpose, including Raspberries, Peas, Beans, Tomatoes, Vines, Fencing, etc. Only 19/6 mile. Special prices small lots. Postcard for free samples and list of 400 Government Surplus Bargains.—GREEN, 681, Albert Street, Lytham.

FLOWER SHOW SCHEDULES.—I shall be glad to revise schedules to bring them in accordance with the R.H.S. Rules for Judging; moderate fees.—HORACE J. WRIGHT, F.R.H.S., The Street, Woolpit, Bury St. Edmunds.

HAVE your Motor Mowers repaired by the people who specialise in the job. Lowest Rates, Satisfaction guaranteed. A post card stating size and make of machine will ensure estimate reaching you by return of post.—TRIMMING & CO., Engineers, Burnham, Bucks.

TURF CUTTING MACHINE (Green's) for Sale: in good condition, hardly used; suitable for Cricket, Golf, Tennis, or Garden Estates.—Apply Secretary, Renishaw Hall, Derbyshire.

WANTED, JOURNAL OF POMOLOGY, Vol. 2 only.—Offers to be sent to Messrs. EDW. G. ALLEN & SON, LTD., 12-14, Grape Street, W.C.2.

—FROST GIVES

Trouble. The following Mats will keep it out:

	Size.	Weight. lb.	Price Per doz.
RUSSIAN MATS (small size)	7 ft. x 3 ft. 6 in.	2 ...	**14/6**
TAPLOW	6 ft. x 4 ft. ...	2½ ...	**30/-**
All carriage paid.	6 ft. x 6 ft. ...	3¾ ...	**45/-**
	6 ft. x 8 ft. ...	5 ...	**57/6**
	6 ft. x 12 ft. ...	7½ ...	**80/-**

DARJEELING MATTING in Stock Sizes and to measure. Roll on and roll off. No loose ends. All these mats will give your plants during the Winter——

WARMTH

Write for 64 page Catalogue.

WM. WOOD & SON, LTD.
TAPLOW, BUCKS.
'Phone-Burnham 133 & 134. 'Grams-Gardening Taplow

YOUR GARDEN *—A BIRD SANCTUARY*

PROVIDE the Birds with lodgings and they will board themselves off your garden pests and give you constant entertainment with their pretty ways. They like a Bath (it need not be h. and c.).

Catalogue (No. 3a) of Nesting Boxes, Feeding Tables and Baths for Wild Birds: also Sundials, Vases and all Garden Ornaments, post free.

ARTHUR H. MOORTON LTD.
6, BUCKINGHAM PALACE ROAD, S.W.1

ORCHIDS.

Clean, well grown and cheap; also Many Rare and Choice Varieties.

STOVE AND GREENHOUSE PLANTS OF ALL KINDS.

Kindly send for Catalogue.

JAMES CYPHER & SONS,
Exotic Nurseries, CHELTENHAM.

The Calendar of Garden Operations
2/6

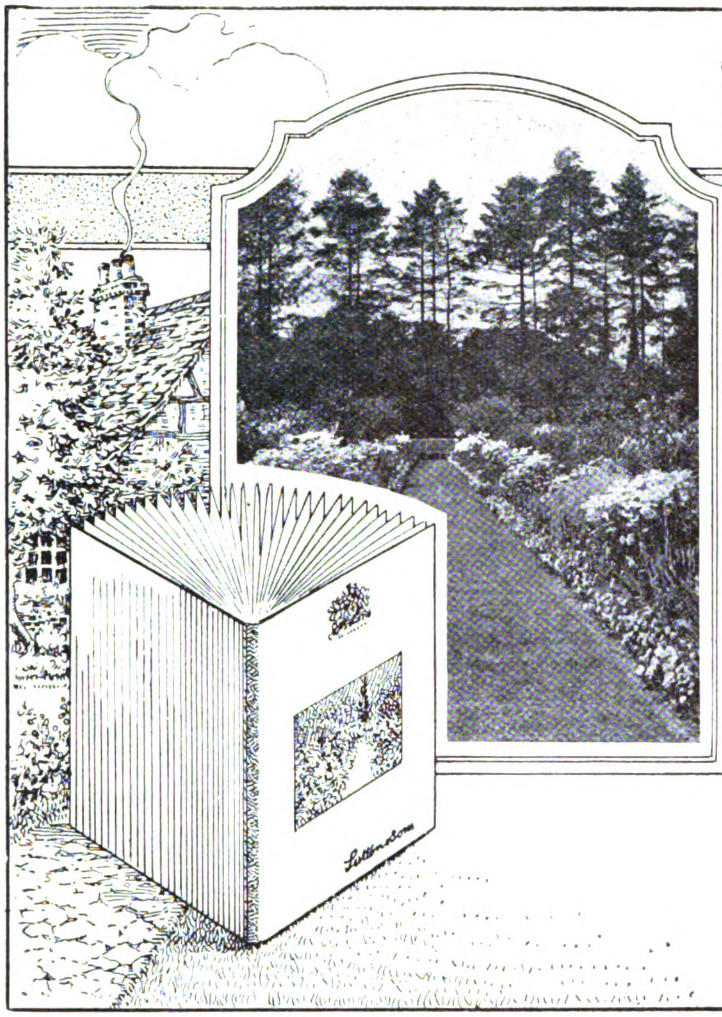
CALENDAR OF GARDEN OPERATIONS

Price **2/11** *post free.*

THIS book, so handy for the amateur or cottage gardener, has been in constant demand ever since it was first published by the late Sir Joseph Paxton, and each new edition, bringing it up to date in method and appearance, has enhanced its wonderful popularity. The arrangement of the contents according to the work to be done in the garden each month makes it delightfully easy to refer to, and in addition there are extremely useful articles on various subjects connected with the garden.

It is just the book for an experienced gardener to give to one rather less experienced, and anxious to avoid the pitfalls into which the unwary are apt to fall.

GARDENERS' CHRONICLE, Ltd., 5, Tavistock Street, Covent Garden, W.C. 2.



By Appointment

Messrs

Sutton & Sons

extend to their many customers and friends the Season's Hearty Greeting and Best Wishes for the New Year.

The Royal Seed Establishment,
READING.
Christmas 1924.

CARTERS TESTED SEEDS

BREAK all RECORDS with

GIANT STRIDE PEA

3/6 *per Pint*
6/- *per Quart*
POST FREE.

☛ *ORDER NOW* ☚

The Largest PODDED *DWARF PEA* IN THE WORLD.

HEIGHT 2 FEET.

ILLUSTRATED CATALOGUE
☛ POST FREE ON APPLICATION.

James Carter & Co SEEDSMEN TO H.M. THE KING.
RAYNES PARK, LONDON, S.W., 20.

Sutton's of Reading.

Lawn and Sports Grounds in Winter.

Little work is necessary at this season of the year, but at the same time turf should not be entirely neglected.

Earth Worms.

Owing to the recent damp periods Earth Worms are very troublesome, but a dressing of Sutton's Worm Destroyer—½ to 1 lb. per square yard, will quickly bring these creatures to the surface where they will die.

Moss

can also be successfully eliminated at this season and a dressing of Sutton's Moss Destroyer at the rate of 1½ lbs. per square pole, applied in dry weather, acts speedily, while the temporary scorching of the grass does not permanently injure it.

Enquiries are invited, and we shall be pleased to give advice either by correspondence or by a visit. Address: Dept. "S.A.D."

SUTTON & SONS
The King's Seedsmen
Reading.

For Lawn Grass Seeds, Fertilisers, etc.

By Appointment.

NOW READY

WEBBS'

Beautifully Illustrated

GARDEN CATALOGUE

FOR 1925

contains particulars of the

"Best of Everything that Money Can Buy for the Garden & Lawn"

If you are interested, and would like a copy, post your name and full address at once to:

WEBB & SONS, LTD.

The King's Seedsmen,

STOURBRIDGE.

Send at once for our New Illustrated

CATALOGUE

of

Guaranteed **ROSES** Herbaceous Plants and Fruit Trees

GARDEN SECRETS REVEALED FREE.

Our new Coloured Illustrated Guide to Gardening and Catalogue of Guaranteed Roses and Plants is now ready. It contains valuable information which will help to secure full success. Even the smallest piece of ground may be turned into a glorious flower garden at a small cost. If you write at once we will send this booklet free of charge.

Write direct to our head office:

HAMPTON PLANT Co.

2 New Malden Surrey

FOR SALE.

EDINA BLACK CURRANT BUSHES

from the same stock as grown by the Firm, who have a very large acreage. One and Two-year old. Splendidly grown. Free from Big Bud. Sample Bush and Price sent free on application.

The following

APPLE TREES

splendidly grown on English Broad Leaf Paradise Stock, one and two-year old:

NEWTON WONDER	HISTON FAVOURITE
KING EDWARD VII	CHARLES ROSS
GRENADIER	NORFOLK BEAUTY
LORD DERBY	REVD. WILKS

WORCESTER PEARMAIN.

SUPERLATIVE RASPBERRY CANES

BATH'S PERFECTION

BAUMFORTH'S SEEDLING

Prices on application.

CHIVERS & SONS, LTD.

HISTON, CAMBS.

PHOSPHATE OF AMMONIA

PHOSPHATE OF POTASH

Very concentrated, especially suitable for high-class Gardening Fertilisers.

PERRY & HOPE, Ltd., Nitshill, nr. Glasgow

McDOUGALL'S

ARBORETAS

WINTER WASH.

Unrivalled as a Wash for cleansing Fruit Trees from Moss and Lichen. Destroys Fungoid Spores and Hibernating Insects.

PINT TINS, 2/-; QUART TINS, 3/3; ONE GALLON TINS, 10/-

Sold by Seedsmen, Ironmongers, etc.

McDOUGALL & ROBERTSON, LTD., 66/68, Port Street, Manchester.

THE GLASSHOUSE FUMIGANT, FROM SEEDSMEN.

CORRY'S
WHITE FLY
DEATH

Beware of Imitations. SHAD THAMES LONDON S.E. 1

Directions in each Bag **KIRK'S** Supplied in two grades

up to date

Vine, Plant and Vegetable Foods (Registered)

The Best in the Market for all purposes.

Facts which cannot be disputed.

cwt. 30/-; ½-cwt. 16/-; ¼-cwt. 9/- Carriage paid.

The Best in the Market for all purposes

None Genuine without this Registered

450 FIRST PRIZES
INCLUDING
NINE SILVER CHALLENGE
JUBILEE
CUPS
R.S. KIRKS VINE & PLANT FOOD
A Powerful Fertiliser

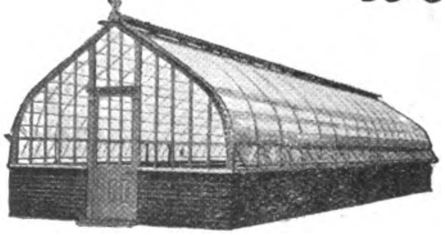
Trade Mark attached to every Bag.

Sold by all Seedsmen, or from the sole makers:

KIRK & CO.

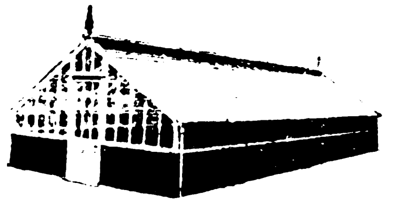
40, Timber Bush, LEITH, N.B.

Cut down painting, wood & putty!



BUILD "WIRE TENSION" GREENHOUSES

Send for Catalogue.



IRON FRAME FLAT GLASS

NO ROOF PAINTING NO PUTTY

PHOSPHOR BRONZE CLIPS

SKINNER BOARD & CO.

GREENHOUSE & HEATING SPECIALISTS,

BRISTOL

GEO. JACKMAN & SON

Woking Nurseries, SURREY,

Invite Inspection of their Large and Varied Stock of

ORNAMENTAL TREES AND SHRUBS,

FOREST TREES, CLIMBERS

(Including their Celebrated Clematis).

FRUIT TREES, ROSES, HERBACEOUS AND ALPINE PLANTS.

200 Acres of Stock to Select from.

Catalogues Free on Application

Advice given on all matters appertaining to

LANDSCAPE GARDENING and ESTATE IMPROVEMENTS.

CHRYSANTHEMUMS.

My 64-page Catalogue and Guide, post free, contains Best Up-to-date Collections, including the New Varieties of 1925, for Exhibitors.

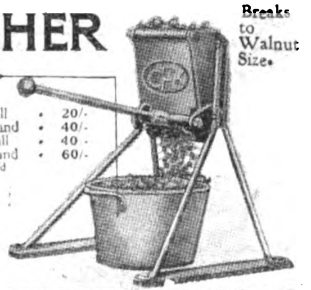
My New Earlies, some of which have gained Awards by the R.H.S. and N.C.S. recently. Also New Decorative Varieties of Recent Introduction. In all, 360 Varieties, all sections.

Also Catalogues of over 300 Varieties all Sections, Dahlias, Begonias, finest double-named, semi-double and single, in separate colours. Border Carnations, collection of 130 Varieties. Winning Silver Cup Three Seasons.

Zonal Pelargoniums, 120 Finest Varieties obtainable. Violas, 100 Exhibition and Bedding Varieties. Pansies, 50 Varieties named Scotch, from best raisers. Sweet Peas, etc., etc.

H. WOOLMAN, Shirley, Birmingham

KINNELL'S COKE CRUSHER FROM STOCK



Breaks to Walnut Size.

Strong Coke Pans 10/- extra

Small Crusher for Wall . 20/-
Ditto on Wrought Stand . 40/-
Large Crusher for Wall . 40/-
Ditto on Wrought Stand . 60/-
Carriage Paid

Large Crusher breaks 1 cwt. and Small Crusher 42 lbs. in 20 minutes

CHAS. P. KINNELL & Co. LTD
65, 65A Southwark St. London. S.E.1

BLACK CURRANT BUSHES.

Variety "EDINA." The best in the world.

FIRST PRIZE at ASHFORD, KENT, SHOW, July, 1924, Very fine three-year old bushes, 7/6 doz., 14/9 per 24, carriage paid by passenger. 17/6 per 50, 32/6 per 100, £16 per 1,000, free on rail goods train.

2-year old bushes half above prices.

Book now from the raiser for Autumn or Spring delivery. Stock free from big bud or reversion.

T. A. SCARLETT (Dept. C.),
22, MARKET STREET, EDINBURGH. Established 1841.

THE CLEANER THE TREES THE BETTER THE FRUIT

COOPER'S WINTER SPRAY FLUID

Cleanses and re-invigorates the trees.

1 pt. 2/3 Qt. 3/3 1 Gall. 9/6 5 Gall. 38/6

WILLIAM COOPER & NEPHEWS, LTD., (Sole Manufacturers.) BERKHAMSTED.

RIVERS' FRUIT TREES

You may utilise what might otherwise be waste ground by planting Nuts. We have good trees of the best sorts.

Thomas Rivers & Son Ltd.,
The Nurseries
SAWBRIDGEWORTH, HERTS.
Station: Harlow, L. N. E. R.

STOVE & GREENHOUSE PLANTS

Aralias, Crotons, Caladiums, Dracænas, etc., all kinds of Foliage, Flowering & Climbing Plants

The largest and most complete collection in the Trade.

L. R. RUSSELL, LTD.,
Richmond Nurseries, Richmond, Surrey.

THE R.H.S. Gardeners' Diary

NOW READY.

A handy size for the pocket, bound in coloured leather cloth with pencil at back, and patent self-opening device.

Price 2/2 post free.

GARDENERS' CHRONICLE, Ltd.,
5, Tavistock Street,
Covent Garden, W.C. 2.

By Appointment

SANKEY'S FAMOUS GARDEN POTS

Largest Manufacturers of Flower Pots in the World.

THE BEST AND CHEAPEST.

SPECIAL POTS for Roses, Vines, Clematis, Orchids, and Chrysanthemums.

Fancy Fern Pans and Bulb Bowls, from 3d. each.

No Waiting! All Orders executed the same day as received.

State quantity of each size required and have Carriage Paid quotation, or write for Illustrated Price List.

RICHARD SANKEY & SON, LTD.
Royal Potteries,
BULWELL, NOTTINGHAM.

NOTES FROM MAIDSTONE.

Our New Illustrated List of Herbaceous, Alpine and Climbing Plants describes all the best varieties of:

PAEONIES, IRIS, DELPHINIUMS, PHLOX, CLEMATIS, ALPINE PLANTS, &c.

A copy will be sent free on mentioning this paper.

Established 1796.

Geo. Bunyard & Co., Ltd.,
The Royal Nurseries,
MAIDSTONE.

Have You Provided?

The United Horticultural Benefit & Provident Society

PROVIDES 27/- per week in illness for 1/1½, 18/- for 9d., or 12/- for 6d. weekly contributions.
PROVIDES your dependants with £10, £15 or £20 at death, according to scale.
PROVIDES you with a Savings Bank.
PROVIDES grants from Distress and Convalescent Funds.

PROFIT BY THE EXPERIENCE OF A MEMBER WHO HAS £150 TO HIS CREDIT

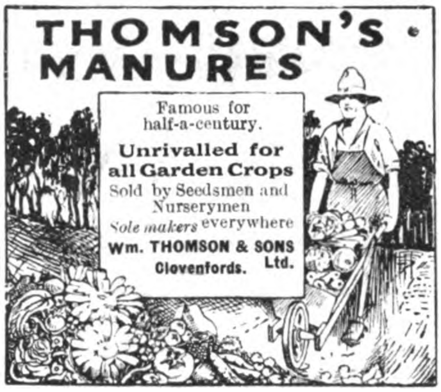
State insured Members of this Society may pay an additional 2d per week for an extra 4/- sick pay, or 4d. per week for an extra 8/- sick pay. This is in addition to the State Benefits, and £10 payable at death.

Private and Market Gardeners, Nurserymen, Seedsmen and Florists up to the age of 45 years are eligible for membership

These advantages are fully explained in the pamphlet obtainable from Mr. C. F. Harding, "Overton," Lower Shiplake, Henley-on-Thames; Mr. J. W. Penton, Warren House Gardens, Kingston Hill, Surrey; Mr. H. Prince, Polesden Lacey Gardens, Dorking, Surrey, or

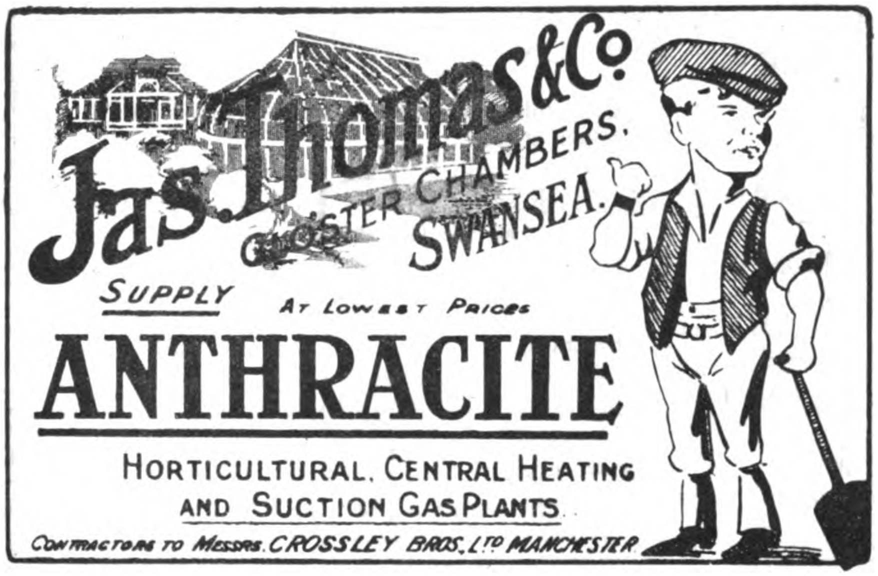
THE SECRETARY
35, Alexandra Road, West Kensington, W. 14

English Grown
HERBACEOUS & ALPINE PLANTS
Specialities :
:: ALPINE PLANTS ::
ASTERS (Michaelmas Daisies)
:: ORIENTAL POPPIES ::
PHLOX :: DELPHINIUMS
PÆONIES, PYRETHRUM, &c.
W. WELLS, JUNR.
Hardy Plant Nurseries
MERSTHAM, Surrey. Phone: Merstham 139.

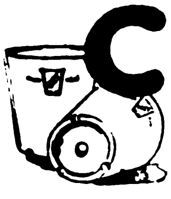


THOMSON'S MANURES
Famous for half-a-century.
Unrivalled for all Garden Crops
Sold by Seedsmen and Nurserymen
Sole makers everywhere
Wm. THOMSON & SONS Ltd.
Clovenfords.

Laxton's Fruit Trees and Small Fruits
We are headquarters for NEW FRUITS
Write for our free booklet on planting & pruning and illustrated catalogue
LAXTON BROS BEDFORD

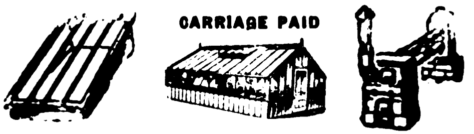


Jas. Thomas & Co.
GLOSTER CHAMBERS, SWANSEA.
SUPPLY AT LOWEST PRICES
ANTHRACITE
HORTICULTURAL, CENTRAL HEATING AND SUCTION GAS PLANTS.
CONTRACTORS TO MESSRS. CROSSLEY BROS. LTD MANCHESTER



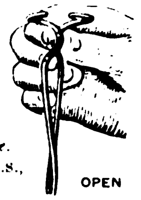
CRETS
The Pots that Drain
PETER BAILEY & SONS, Ltd.,
Heaton Mersey Pottery,
Nr. Manchester.

LARGE CATALOGUE No. 107 FREE
CARRIAGE PAID



Frames from £1 12 6
Greenhouses from £7 12 6
Heating Apparatus from £4 17 8
T. BATH & CO., Ltd., Savoy St., London, W.C. 2

1925 NOVELTY.
Perpetual - Flowering Carnation
"WINSOME WHARTON"
R.H.S. Award of Merit, Oct., 1924.
SPRING DELIVERY
Ex. 3½-in. Pots. 5/- each.
J. R. BATTY,
Skelton Castle Gardens,
SKELTON-IN-CLEVELAND, Yorks.



WILLMOTT
Rival Plant Stake
Patented No. 183770)
As used in Royal Botanic Gardens. For all plants.
Will not rot, wear out or break
Samples of 6 sizes 2/- post free.
H. J. GREENWOOD, F.R.H.S.,
Bracknell, Berks.
CLOSED OPEN

INMAN'S
RUSTIC WORK
Summer Houses, Seats, Fences, Arches, &c.
RUSTIC WOOD FOR GARDENS.
Royal Works, STRETFORD.

DOBBIE'S
SCOTCH - GROWN
ROSES
These succeed where others fail.
Send at once for a Catalogue.
Please name this Paper.
DOBBIE & CO. LTD.
Nurserymen—EDINBURGH.

SPECIALITÉ.
SPRING FLOWERING SHRUBS
AZALEAS PRUNUS
CAMELLIAS CHERRIES
MAGNOLIAS DAPHNES
ERICAS LILACS, etc
PLANT NOW. (Carriage Paid.)
V. N. GAUNTLETT & Co. Ltd
Japanese Nurseries, CHIDDINGFOLD Surrey.

WILLIS BROS.'
Garden Fertiliser
THE BEST ON THE MARKET.
NO STABLE MANURE REQUIRED.
For digging in or as a top dressing, For Kitchen Gardens or Herbaceous Borders. 1 cwt., 15/-; ½-cwt., 8/-; 28 lbs., 5/-; £14 10/- per ton. All Carriage Paid.
MATS! MATS! MATS!
New Russian Mats, 7 ft. by 3 ft. 6 in., 14/6 doz.
New Hessian Mats, 9 ft. by 4 ft. 6 in., 3/- each, 35/- doz.
Dressed-Canvas Covers, prices on application.
VINE BORDER COMPOUND.
COARSE ... for New Borders.
FINE ... for Renovating Old Borders.
25/- per cwt. £24 per ton. Carriage Paid.
For New Vine Borders—To each cart load of good fibrous loam, add ½-cwt. Compound and 1 bushel Stick Charcoal, and mix thoroughly.
For Renovating Old Borders—Remove as much as possible of the surface soil without damaging the roots, and mix ½-cwt. Vine Border Compound with each ton good Fibrous Loam
WINTER WASH for Fruit Trees.
This is prepared from the recipe of a celebrated Canadian Apple Grower, who is noted for his clean fruit and orchards. 1 gal., 10/-; 5 gals., 45/- Cans included. Carriage paid.
GARDEN SUPPLIES AT LOWEST PRICES.
Write for our list of Garden Manures and Horticultural Sundries. Free on application.
WILLIS Bros. (HARPENDEN) Ltd.
HARPENDEN, HERTS.

Books for the New Year.

ALL PRICES GIVEN INCLUDE POSTAGE IN THE UNITED KINGDOM.

SPRING FLOWERS AT BELVOIR CASTLE. *By W. H. Divers.*

The art of Spring Bedding, as employed in the famous gardens at Grantham. **5/6**

THE CALENDAR OF GARDEN OPERATIONS

Takes the gardener right through the year, showing him the work to be done each month in fruit, vegetable and flower quarters. **2/11**

BLACK'S GARDENING DICTIONARY

An excellent book of reference, and a godsend to the busy gardener. **11/3**

ROCK GARDENS AND ALPINE PLANTS. *By T. W. Sanders.*

A complete guide to the construction of large and small rockeries. Profusely illustrated in colour and half-tone. **8/-**

THE COMPLETE AMATEUR GARDENER. *By H. H. Thomas.*

A most useful book—so comprehensive that it forms a compendium of garden lore in itself. **16/9**

PRACTICAL AMATEUR GARDENING

By H. H. Thomas

An excellent gift for the non-professional lover of gardens. **9/-**

THE BOOK OF HERBS.

By Lady Rosalind Northcote.

This little work teems with interest for the lover of old-world gardens. **4/-**

MODERN FRUIT GROWING.

By W. P. Seabrook.

Illustrated in colour. An ideal guide to remunerative fruit production, by a master-hand. **5/-**

THE FLOWER GARDEN.

By T. W. Sanders.

With its beautiful coloured plates and attractive binding, this book makes an ideal gift. **11/3**

ENCYCLOPÆDIA OF GARDENING.

By T. W. Sanders.

A veritable vade-mecum for the gardener, whether professional or amateur. **6/6**

POPULAR HARDY PERENNIALS.

By T. W. Sanders.

Beautifully illustrated; the very book for a valued present. **8/-**

THE ENGLISH ROCK GARDEN.

By the late Reginald Farrer.

In two volumes. This the classic of the rock garden, indispensable to those who love Alpines and desire to do them justice by correct treatment. **£3 . 4 . 3**

COLOUR PLANNING OF THE GARDEN. *By G. F. Tinley, Thos. Humphreys, and W. Irving.*

With fifty beautiful plates in colour by Miss M. W. Anson. The only book on colour gardening as a separate art, it makes an instant appeal to the horticulturist, whether amateur or professional. **£2 . 3 . 0**

CACTUS CULTURE FOR AMATEURS

By William Watson.

The only English book which deals with this fascinating hobby. It is well and freely illustrated, and would make a highly acceptable small gift. **2/3**

CLIMBING PLANTS. *By William Watson.*

This is a volume of the ever-popular "Present-Day Gardening" series, with the characteristic eight fine coloured plates; now nearly out of print. We have a few volumes left at the price of **5/6**

THE BOOK OF THE GREENHOUSE.

By J. C. Tallack.

Just the book for those trying greenhouse cultivation for the first time, and anxious to profit by the experience of others. **4/-**

THE BOOK OF THE IRIS.

By R. Irwin Lynch.

Everyone loves the tall, graceful Iris, and its culture is by no means difficult, especially where sufficient moisture can be obtained. **4/-**

THE GARDENERS' CHRONICLE, Ltd., 5, Tavistock Street, Covent Garden, London, W.C. 2.

SITUATIONS VACANT

Twenty words (or three lines including headline, **4s.**, *and* **1s.** *for every succeeding eight words (or line or portion thereof). Fee for having replies addressed to this office* **1s.**

Advertisers desiring their Advertisements repeated must give **full particulars,** *otherwise no notice can be taken of their communications. Name and address alone are insufficient.*

Gardeners writing to Advertisers of Vacant Situations are recommended to send them **copies** *of testimonials only, retaining the originals. To part with original documents means to run a great risk of their being mislaid.*

When addressing Box numbers, it is essential to give the **initials or pseudonym,** *as well as the correct number of the box.*

PRIVATE.

WANTED, experienced WORKING HEAD GARDENER, two others kept; must be capable both Inside and Out; good cottage. State age, experience, wages, etc.—Apply A. G. JOHNSON, The Radfords, Stone, Staffs.

WANTED, GARDENER for country cottage in Surrey; experience with vegetables, fruit, and flowers; good rooms close by.—Apply, stating wages to W. E. D., 20, Albemarle Street, W. 1.

WANTED, thoroughly experienced MAN to take charge of herbaceous borders, flowering shrubs, and climbing plants, also act as FOREMAN on lawn; good cottage.—State wages to J. MACDONALD, Leladene Gardens, Dorking, Surrey.

GARDENER WANTED for country house, Cumberland; wife or mother must take charge of house and cook occasionally for owner; north country man preferred; good cottage.—RATHBONE, Greenbank. Liverpool.

WANTED, YOUNG MAN with a good knowledge of alpine and hardy border plants. —State wages and experience to THE CURATOR, Botanical Gardens, Birmingham.

TRADE.

MANAGING PROPAGATOR wanted.—Please state age, experience, and all particulars, DOWNER, Drayton Manor Nurseries, Chichester.

WANTED, SEED ANALYST, fully trained. Apply with references, stating salary required, to LAING & MATHER, The King's Seedsmen, Kelso.

WANTED, a WORKING FOREMAN with first-class experience with Roses, to take charge of outside department of Rose growing. Only men accustomed to handling Roses in quantity need apply. Applications containing full particulars of previous experience, age, and wages required, to B. R. N., Box 21, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, CUCUMBER GROWER; Charge Hand under Foreman.—RAMSBOTHAM & CO., Bletchley Junction.

WANTED, competent GROWER; Toms., Cucs., Pot., cut stuff; good wages; references for ability and character essential; permanency.—BALL, Florist, Barry.

WANTED, CARNATION PROPAGATOR; good wages; only first-class men need apply.—C. MADSEN, Hammond Street, Cheshunt.

WANTED, ASSISTANT with knowledge of the Seed, Bulb and Nursery trade.—Apply with full particulars, stating age, salary required, experience, etc., to ARTHUR ROWLES, 14, Market Street, Oxford.

WANTED, ASSISTANT SHOPMAN, with good knowledge of Nursery goods and able to correspond with customers on the subject.—State age, experience, and wages to ALEX. DICKSON & SONS, (Dublin), LTD., 61, Dawson Street, Dublin.

WANTED, at once, a strong YOUNG MAN for packing, despatching and general work in Seed Warehouse.—State experience and wages required, ROBERT VEITCH & SON, Exeter.

SITUATIONS WANTED

Twenty words **2s.**, *and* **6d.** *for every succeeding eight words or portion thereof. (Advertisements at this special rate are only accepted direct from gardeners and nursery employees.) Fee for having replies addressed to this office,* **1s.**

MUNICIPAL AND PUBLIC.

SKEGNESS URBAN DISTRICT COUNCIL.

APPLICATIONS are invited for the position of GARDENER. Applicants should state age, experience, and wages required, and forward the same to the undersigned not later than January 1st, 1925.

Canvassing will disqualify. R. H. JENKINS,
Engineer and Surveyor.

PRIVATE.

T. SOPWITH, Esq., recommends his HEAD GARDENER to any lady or gentleman requiring the services of a thorough, practical, reliable, trustworthy, conscientious, hard worker; good supervisor of men. —Apply to LEITH, Horsley Towers, East Horsley, Leatherhead, Surrey.

GARDENER, HEAD WORKING, or good SINGLE-HANDED; highly recommended; life experience; 3 years here; age 33; married, one child; cottage.—ALLCORNE, The Cottage, 69, Stamford Hill, N. 16.

GARDENER, SINGLE-HANDED, or otherwise; life experience Inside and Out; 3 years and 9 months present place; wanted for January. —F. PRAGNELL, Manor Farm Cottage, Shepperton-on-Thames.

FOREMAN, Inside, 25 years' experience, gained in private and trade; good knowledge of fruits and plants; well recommended; medium-sized place preferred; 39; single.—CARNATIONS, Box 48, 5, Tavistock Street, Covent Garden, W.C. 2.

MRS. GODDARD can most highly recommend W. HOLDER as first-class GARDENER, both Inside and Out, in a large place.—W. HOLDER, The Lawn Gardens, Swindon, Wilts.

JOURNEYMAN requires situation, Inside, under foreman; 7½ years' experience; good refs.—Particulars to S. HOLLAND, The Gardens, Buckhurst Park, Ascot.

SITUATION required as JOURNEYMAN, Inside; age 24; bothy; place being sold; disengaged January.—H. HEWINS Colworth Gardens Sharnbrook, Beds.

GARDENER-CHAUFFEUR; experienced; age 27; electric work: married, no children; good references; ex-service man.—NUTTALL, Penylan Hall, Meifod, Montgomeryshire.

TRADE.

FOREMAN GROWER; first-class experience with Tomatoes, Cucumbers, flowers, bedders; 26 years' good, general experience; well recommended; 39, single.—TOMATOES, Box 49, 5, Tavistock Street, Covent Garden, W.C. 2.

A BOOK FOR TROPICAL GARDENERS.
"THE MANGO"
By G. MARSHALL WOODROW.
ALL who have the advantage of a tropical or semi-tropical climate should send for a copy of this little brochure.
Price - - 1/2 post free.
GARDENERS' CHRONICLE, LTD.
5, Tavistock Street, London, W.C. 2.

FORM OF SUBSCRIPTION TO THE GARDENERS' CHRONICLE

From

Name ....

Address ....

....

.... 19

Please send me **The Gardeners' Chronicle**

for ....*Months, commencing* ....

for which I enclose P.O ....

Please note that all copies sent direct from this office must be paid for in advance.

12 *Months,* 30*s.*; 6 *Months,* 15*s.*; 3 *Months,* 7*s.* 6*d.*; *Post Free.*

Receipts for less than three months' subscription will not be sent unless specially asked for.

All remittances to be made payable to the GARDENERS' CHRONICLE, Ltd., and sent to 5, TAVISTOCK STREET, COVENT GARDEN, LONDON W.C. 2.

MESSENGER & Co. LTD., LOUGHBOROUGH,

Horticultural Builders and Heating Engineers.

LONDON OFFICE: 122, VICTORIA STREET, WESTMINSTER, S.W.1.

Experience extending over more than Half a Century enables us to include all that is best in the design and equipment of Glasshouses

Estimates free. **Interviews by appointment in any part of the country.**

For Heating Ranges of Glasshouses our **QUORN SECTIONAL BOILER** is economical in first cost, in fixing, and in fuel consumption.

Hot Water Pipes, Valves, and all Heating Accessories direct from our own Foundry.

Contracts undertaken for complete Installations.

TURF LOAM.

Very Fibrous Yellow Turf Loam

For VINE BORDERS, CARNATIONS, ROSES, MELONS, CHRYSANTHEMUMS FRUITS UNDER GLASS, etc. etc.

Quotations Carriage Paid to any Station.

A. B. JOHNSTON,

New Park, Cranleigh, SURREY.

"Auto-Shreds" did it!

I just burnt them on the ground and they thoroughly fumigated my plants. The judge wanted the name of the stuff that kept my flowers so insect-free. I told him "Darlington's AUTO-SHREDS." At all seedsmen. They cost—No **1** (To fumigate 10,000 cubic ft.) For tender or ordinary plants, **6/-**. No. **2** (10,000 c f.) Ordinary plants, **4/6.** No **3** (1,000 c.f.) Ordinary or tender plants, **1/-** No **4** (2,500 c.f.) ditto, **1/9** *Any difficulty in obtaining, write direct to*

W. DARLINGTON & SONS, LTD.
HACKNEY, LONDON, E. 8.

McDOUGALL'S

INSECTICIDE "FUMERS"

FOR GREENHOUSE FUMIGATION.

FOR 1000 CUBIC FEET 1/6 EACH.	SOLD BY SEEDSMEN, IRONMONGERS, ETC., OR DIRECT FROM McDOUGALL AND ROBERTSON, LTD., 66/68, PORT STREET, MANCHESTER	FOR 2000 CUBIC FEET 2/6 EACH.

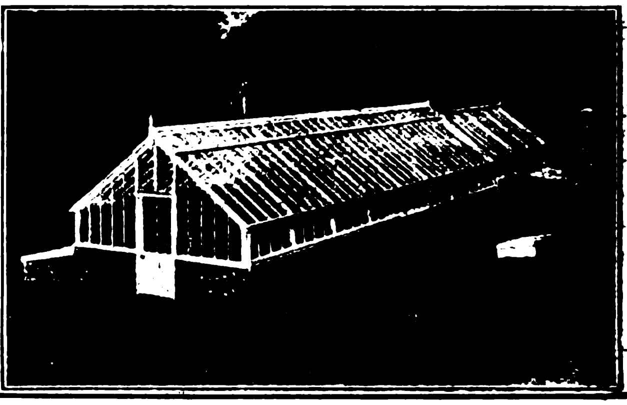
ONE GARDENER TELLS ANOTHER!

BECAUSE our Glasshouses enable him to produce the best results.
BECAUSE our work and prices give his employer the utmost satisfaction.
THEREFORE, when you require
DRAWINGS, embodying expert planning,
SPECIFICATIONS, detailing genuine materials and skilled craftsmanship,
ESTIMATES, giving lowest prices consistent with above conditions,
write to

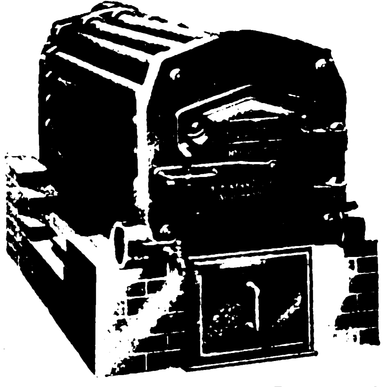
CARTER
Horticultural Builders & Heating Engineers
HOWARD
KINGSTON ROAD,
RAYNES PARK,
LONDON, S.W. 20.

All Buildings erected complete with Brickwork and Heating Apparatus in any part of the country.
Competitive Estimates for **REPAINTING** with genuine **WHITE LEAD PAINT.**
Mixed on the Job.

ESTABLISHED 1909. Telephone: WIMBLEDON 2377.



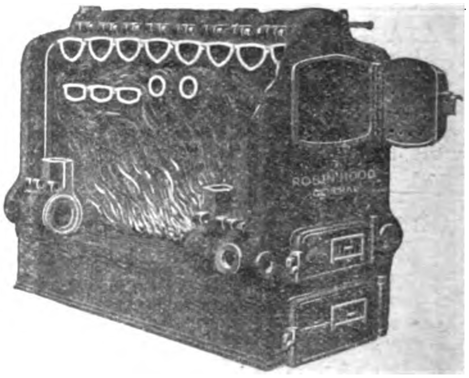
Phone: HOP 362 (three lines). Wire: Kinnell-Boroh London.



Kinnell's

EFFICIENT BOILERS

FOR GREENHOUSE HEATING
ROCHFORD & BISSON TUBULAR BOILERS
SECTIONAL BOILERS——HOT-WATER PIPES
Hot-Water Valves Ventilating Gear
Awarded Gold Medal Royal International Exhibition 1912.
Heating Apparatus erected in any part of the Kingdom
FORTY YEARS' EXPERIENCE



CHAS. P. KINNELL & Co. Ltd. ENGINEERS & IRONFOUNDERS 65, 65a, SOUTHWARK ST. LONDON S.E.

Printed by H. M. POLLETT & CO., LTD., Fann Street, London, E.C. 1, and published weekly by THE GARDENERS' CHRONICLE, LTD., 5, Tavistock Street, Covent Garden, W.C. 2, Saturday, December 27th, 1924.

STANFORD UNIVERSITY LIBRARY

To avoid fine, this book should be returned on
or before the date last stamped below.

580.5
G218
v.76
1924

NON CIRCULATING
DO NOT REMOVE
FROM THE LIBRARY

FALCONER
BIOL. LIB.